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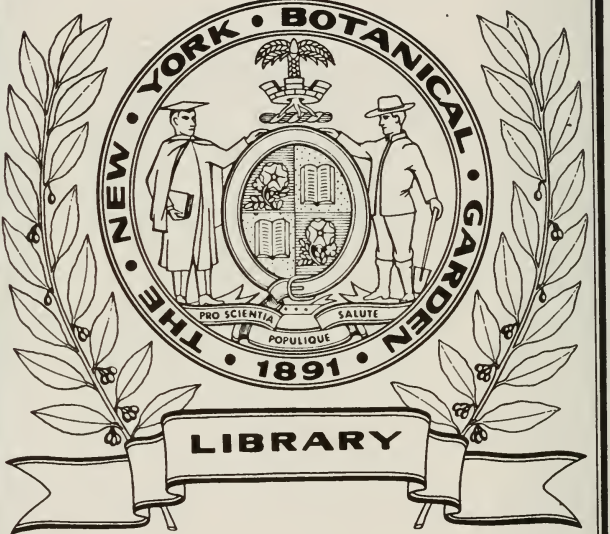

Mary Pole Stuart
from her Father
1834.

ELEMENTS

OF THE

SCIENCE OF BOTANY,

AS ESTABLISHED

BY LINNÆUS;

WITH

EXAMPLES TO ILLUSTRATE THE CLASSES AND ORDERS OF HIS SYSTEM.

Third Edition.

VOL. II.

LONDON:
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FOR
J. MURRAY, FLEET-STREET

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ENNEANDRIA.

CLASS IX.

NINE STAMINA.

This Class has three Orders.

ORDER I.

No British Plant of this Order.

MONOGYNIA.

One Pistillum.

CINNAMON. This valuable tree grows to more than twenty feet in height; the trunk extends about six feet, and is one foot and a half in diameter; it sends off numerous branches, which are covered with a smooth bark, of a brownish ash colour; the leaves, which are a bright green, stand in opposite pairs upon short foot-stalks; somewhat of an oval shape obtusely pointed, entire, firm; from three to five inches long, marked with three longitudinal nerves of a lighter colour. The blossom contains one pistillum and nine stamina shorter than the corolla, and consists of six petals of a greenish white or yellowish colour; the fruit is a pulpy pericarpium resembling a small olive, of a deep blue colour, inserted in the corolla, and containing an oblong nut.

The true Cinnamon-tree is a native of Ceylon, where, according to Ray, it grows as common in

NOV 16 1972

the woods and hedges, as the hazel with us, and is used by the Ceylonese for fuel and other domestic purposes. There are many varieties, or different species, of this tree, which grow also in Sumatra and the coast of Malabar, as well as in the island of Ceylon itself, where Seba has described no less than ten kinds; but whether these different kinds are so many species or only varieties, does not seem at present to be clearly ascertained.

The Cinnamon of Ceylon is more highly flavoured than that of any other country. It is the inner bark of the tree, in the language of botany called the *Liber,* which is used as a grateful aromatic spice. This bark is produced in the most perfect state when the tree is about six or seven years old, but this varies according to circumstances. Seba says, that those trees which grow in the vallies where the ground is a fine whitish sand, will in five years time be fit to have the bark taken off. Others, on the contrary, which are in a wet slimy soil, must have seven or eight years time to grow before they are fit to peel. When the tree is considered to be sufficiently mature for this purpose it is first stripped of its outer greenish coat, and is then cut longitudinally from the tree, and dried in the sand till it becomes fit for the market, when it is of a reddish yellow, or pale rusty-iron colour, very light, thin, and by the heat of the sun curled up in quills or flakes. The outer part of the bark, when taken off from the tree, differs very little in taste from that of other trees; but after being dried in the sun, the oily and agreeable sweetness of the inner bark is diffused through the whole. If the trees are more than fifteen or sixteen years old, the bark by degrees loses its aromatic quality, and has more the taste of Camphor. When the bark is stripped off, the tree is cut down, and new shoots put forth from the stool.

The use of the Cinnamon-tree is not confined to the bark; the leaves, fruit, and root, all yield oils of different qualities, and of considerable value. That produced from the leaves is called Oil of Cloves; that from the fruit is extremly fragrant, and of a thick consistence, and at Ceylon is said to be made into candles for the sole use of the king. The bark from the root of the tree not only affords an aromatic oil, which has been called Oil of Camphor, but also a species of Camphor which is purer and whiter than common Camphor.

The Cinnamon tree is also cultivated in the islands of the West Indies.

ORDER 2.

No British Plant of this Order.

TRIGYNIA.

Three Pistilla.

RHUBARB. This plant is a native of Tartary and China, near to the great wall. It blossoms in April and May. Of this genus there are seven species, but the root of the *Rheum Palmatum* is the drug that is sold in the shops.

It was first introduced into England in 1734; but it was not till many years afterwards unequivocally known to be the medicinal Rhubarb as imported from Russia and the East. This plant is an example of remarkably quick vegetation; the stem of it in three months, has been known to grow upwards of eleven feet, and some of the leaves to five feet in their longest extent. The root, which remains in the ground during the winter, grows also to a very large size; some have been produced in this country, of five years old, that have weighed more than seventy pounds in their fresh state.

From the best experiments that have been made upon the British Rhubarb, it appears to be of the same medicinal quality with that which is imported; but not quite so active in its operation, which is supposed to be owing to some want of skill or knowledge in curing it.

In the month of April the tender foot-stalks of the leaves of this plant are sometimes used in pastry as a substitute for green gooseberries, but for this purpose the *Rheum undulatum*, another species of this genus, is preferred.

ORDER 3.

HEXAGYNIA.

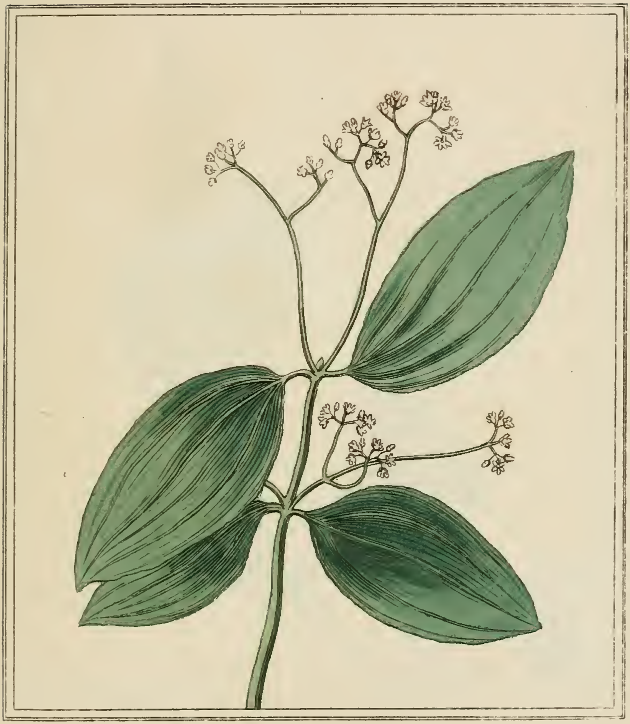
Six Pistilla.

FLOWERING RUSH is the only British plant of the ninth class in the Linnæan System; and the only plant of this Order; of which there is but this one known species; it grows in ditches, and on the margins of rivers and ponds, chiefly in a gravelly soil, and blossoms in July. Like several of our aquatic flowers, it may be reckoned amongst the most ornamental. If vegetables were classed according to their natural affinities, this would rank among the Lilies. It is sufficiently hardy to bear the cold of Lapland.

CLASS IX

ORDER 1

CINNAMON

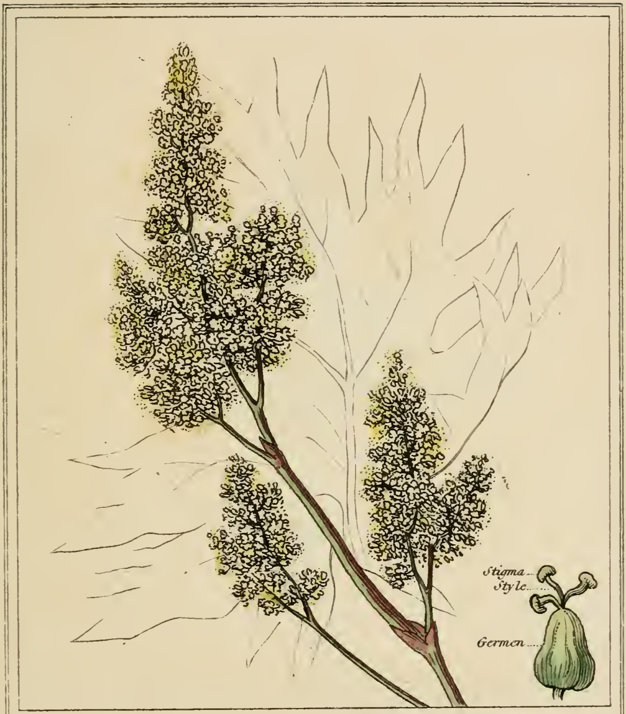


LAŪRUS CINNAMŌMUM

CLASS IX

ORDER 2

RHUBARB

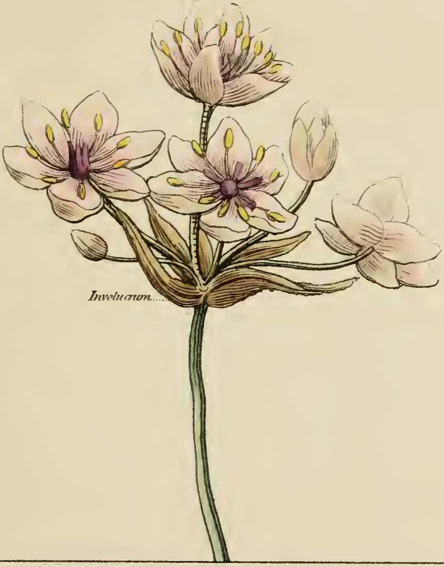


RHĒUM PALMĀTUM

CLASS IX

ORDER 3

FLOWERING RUSH


Involucrum.....

BUTŎMUS UMBELLĀTUS

DECANDRIA.

CLASS X.

TEN STAMINA.

This Class has five Orders.

ORDER I.

MONOGYNIA.

One Pistillum.

FLY-TRAP OF VENUS. This plant, of which there is but this one species, is a native of the swamps of South Carolina, in America, and exhibits a very remarkable instance of vegetable irritability; the leaves which are at the bottom of the foot-stalk are each divided into two lobes at the extremity, having long teeth on the margin like the antennæ of insects, and within armed with six spines, three on each side, and lie spread upon the ground round the stem, and are so irritable, that when a fly happens to light upon a leaf, it immediately folds up and crushes it to death; and this irritability is greatest in proportion to the slightness of the pressure on these lateral spines. It is observed, that upon touching the leaves in cold weather, no sensible contraction ensues; in warm weather, and particularly at noon, it is very strong.

Mr. Knight, lately Mr. Hibbert's gardener at Clapham, now a nursery-man in the King's Road, made an experiment of supplying this irritability with fine filaments of raw beef, and that plant was more luxuriant than any other; it seems therefore probable that the decomposition of animal matter is peculiarly favourable to its economy, and the singular structure of its leaves may be designed to supply it with insects whose putrescence may act as similar decompositions do when applied to the roots of other plants ; and the innumerable insects drowned in the cup-formed leaves of the Dipsacus, Sarracenia, and Nepenthes, may probably serve for the same purpose.

STORAX-TREE, *Styrax officinalis.* This tree produces the gum storax. The flower has no scent, and the gum does not exude from the tree naturally, as in the Fir and Cherry-tree; but is produced by means of an insect which perforates the tree to lay its eggs, and the gum exudes, presenting a curious instance of the agency of nature. This tree grows wild at Tivoly, near Rome, where I have seen it, as if it were a native; but it was first brought there by the Emperor Arian from the East, when he built his magnificent villa ; and I saw it with interest, as being still a living vestige of the existence of that Emperor who lived when Rome was in the zenith of her glory, and mistress of the world.

British Plants of this Order.

Botanical Generic Names.	Common Names.
25 ANDROMEDA............	1 MOONWORT
10 ARBUTUS	3 STRAWBERRY TREE
2 MONOTROPA.............	1 BIRDS NEST
6 PYROLA................	4 WINTERGREEN

ORDER 2.

DIGYNIA.

Two Pistilla.

CLOVE PINK. The botanical name given to this plant by Linnæus, would seem to shew that it was a favourite with him: Dianthus meaning the Flower of Jove. Ray and Hudson[k] are of opinion that this plant is not a native of this country; but Dr. Smith has inserted it in his *Flora Britanica*, as indigenous.

British Plants of this Order.

Botanical Generic Names.	Common Names.
2 CHRYSOSPLENUM	2 GOLDEN SAXIFRAGE
30 DIANTHUS	6 PINK
9 SAPONARIA	1 SOAP-WORT
50 SAXIFRAGA	13 SAXIFRAGE
3 SCLERANTHUS	3 KNAWEL

ORDER 3.

TRIGYNIA.

Three Pistilla.

CORN CATCHFLY. This plant is a native of Kent, and not known to be a native of any other part of Britain; it is an annual, blossoms in July, and thrives most in a barren sandy soil. In the evening it emits a sweet scent, like that of a honey-suckle, but weaker.

---

[k] William Hudson, in a work entitled *Flora Anglica*, made the first successful attempt to arrange English Botany according to the rules of the Linnæan School.

The Night-flowering Catchfly is another species of this genus; it has cream-coloured petals tinged with red, which roll themselves up during the day, and unfold in the evening while warm weather continues, and, like the Corn Catchfly, is sweet scented.

These plants are, as the Nightingales among the feathered tribe, unattractive in their appearance, and, when nature has retired to rest, cheer the peaceful stillness of the dark.

British Plants of this Order.

Botanical Generic Names.	Common Names.
31 ARENARIA	10 SAND-WORT
1 CHERLERIA	1 CYPHEL
17 CUCUBALUS	3 CAMPION
66 SILENE	9 CATCHFLY
17 STELLARIA	7 STITCH-WORT

ORDER 4.

PENTAGYNIA.

Five Pistilla.

NARROW-LEAVED MOUSE-EAR is a perennial, according to Professor Martyn, though Linnæus makes it an annual plant. It blossoms during the whole summer from the month of May, on walls, by road-sides, and in meadows.

British Plants of this Order.

Botanical Generic Names.	Common Names.
4 AGROSTEMMA	1 COCKLE
18 CERASTIUM	9 MOUSE-EAR
19 COTYLEDON	2 NAVEL-WORT
12 LYCHNIS[1]	3 CUCKOW-FLOWER
96 OXALIS	2 CUCKOW-BREAD
30 SEDUM	9 STONE-CROP
7 SPERGULA	3 SPURREY

ORDER 5.

No British Plant of this Order.

DECAGYNIA.

Ten Pistilla.

VIRGINIAN POKE. Of this genus there are six species; this is a perennial plant, and a native of America, but also found wild in many countries in Europe. It blossoms in July, and through the latter part of the summer and autumn. The berries yield a beautiful purple colour, and are said to have been at one time much used in Portugal to give a deep colour to the Red Port; but the taste being complained of by the Merchants, the Government ordered the plant to be every where cut down before the berries were ripened. In North America and the West Indies the young shoots are boiled and eaten as spinach.

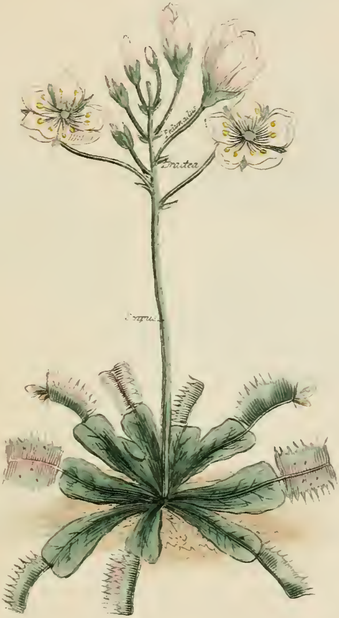
---

[1] One species of this genus, *Lychnis dioica*, has the stamina on one plant and the pistilla on another, and therefore in strict conformity to this system belongs to the Class *Dioecia*.

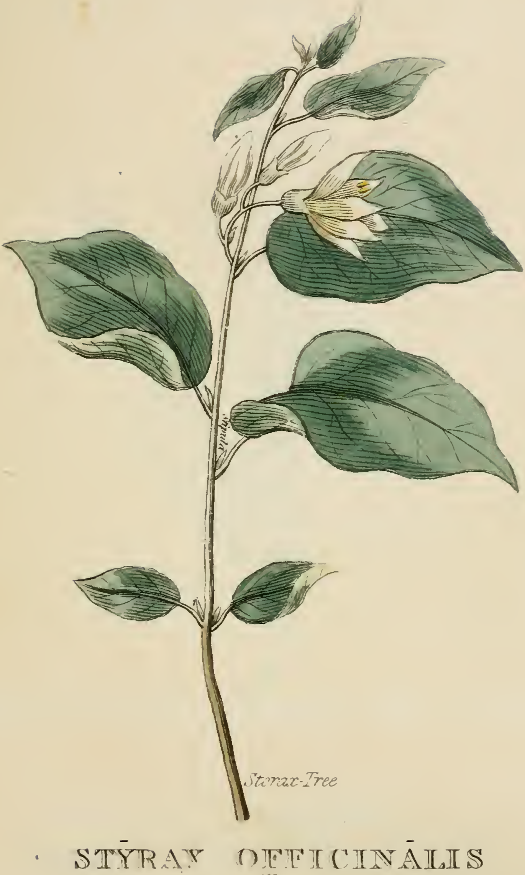
CLASS X

ORDER 1

FLY-TRAP OF VENUS



DIONÆA MUSCIPŬLA



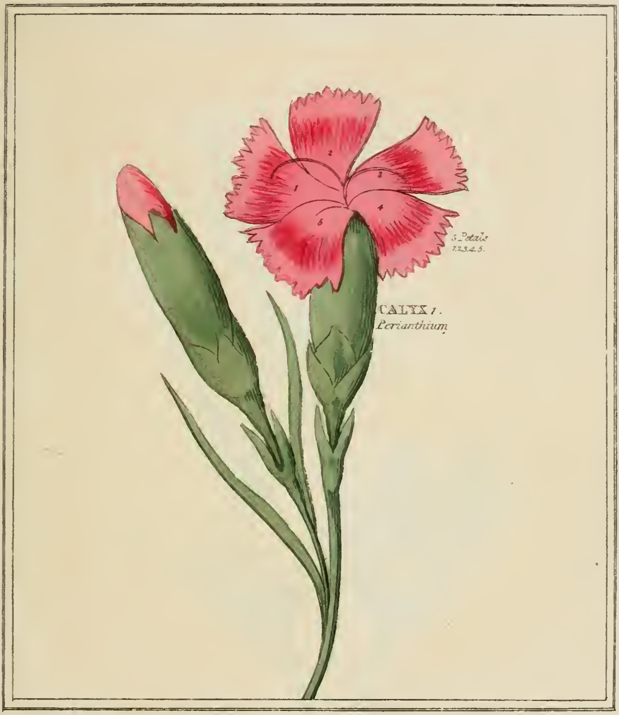
STȲRAX OFFICINĀLIS

X

CLASS X

ORDER 2

CLOVE PINK

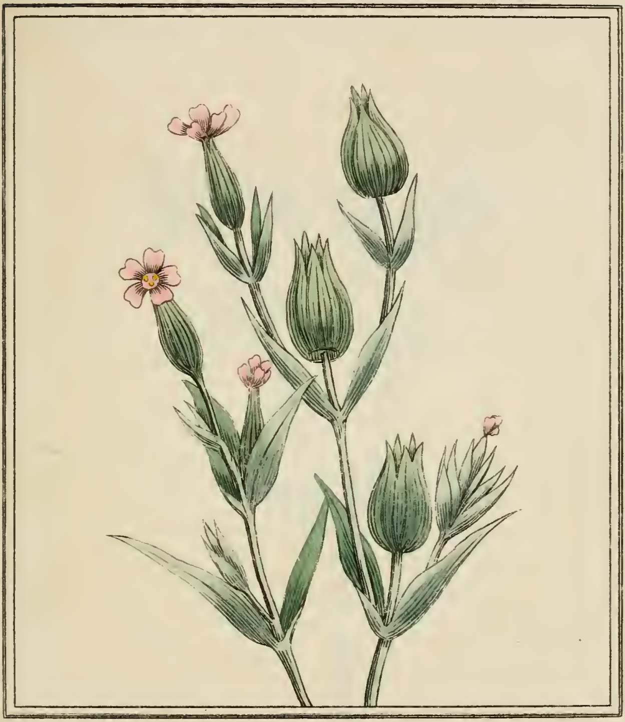


DIĀNTHUS CARYOPHȲLLUS

CLASS X

ORDER 3

CORN CATCH-FLY

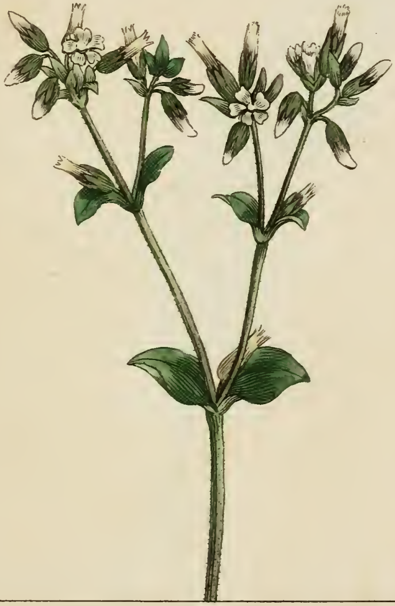


SILĒNE CONĬCA

CLASS X

ORDER 4

NARROW-LEAVED MOUSE-EAR

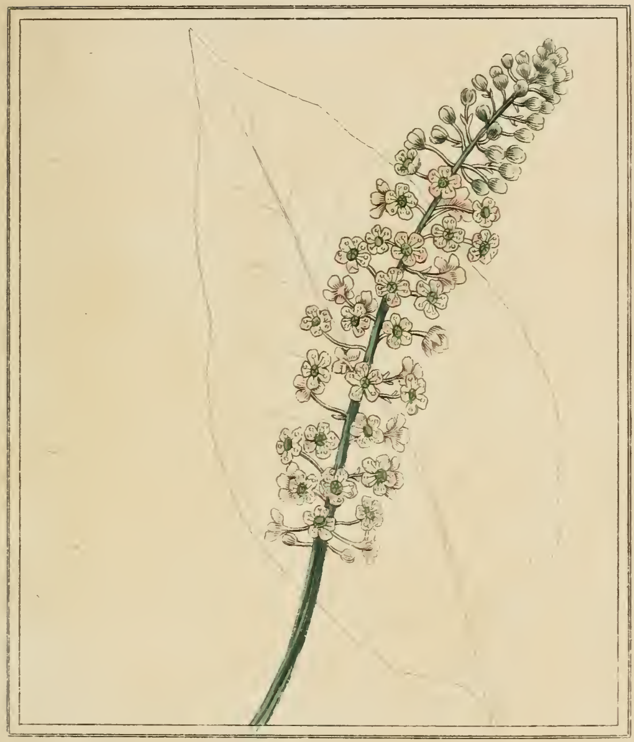


CERASTĬUM VULGĀTUM

CLASS X

ORDER 5

VIRGINIAN POKE



PHYTOLĀCCA DECĀNDRA

DODECANDRIA.

CLASS XI.

TWELVE STAMINA.

This Class has six Orders.

THIS Class is called, in botanical language, by a name *(Dodecandria)* which supposes the plants to have twelve stamina; but the exact number twelve is so uncommon, that no plant has been found to have that number with unvarying precision, therefore this Class has been made to include such as have from eleven to sixteen stamina, and in some cases more, though in no instance to exceed nineteen.

ORDER I.

MONOGYNIA.

One Pistillum.

PURPLE LOOSE-STRIFE grows on the banks of rivers, ponds, and ditches, and blossoms in July and August.

Some old writers have attributed to this genus the power of taming and reconciling ferocious and discordant animals, by putting it about their yokes or necks; in our improved state of knowledge, how this fanciful opinion could have prevailed is difficult to guess, and it is now of no further importance than to account for the etymology of its English name.

British Plants of this Order.

Botanical Generic Names.	Common Names.
3 Asarum	1 Asarabacca
18 Lythrum	2 Loose-strife

ORDER 2.

DIGYNIA.

Two Pistilla.

COMMON AGRIMONY. Of this Genus there are five species: but this is the only species which is a native of Great Britain and the only British plant of this Order: it blossoms in June and July, and is common every where in rough borders of fields, and other waste places. When this plant is beginning to flower, it will dye wool of a good bright nankin colour; if gathered in September it yields a dark yellow. It gives a good colour in all states, and though a common plant, and easily cultivated, I believe it has not yet been applied to any of the purposes of dying.

ORDER 3.

TRIGYNIA.

Three Pistilla.

MIGNONNETTE. There are thirteen species of this Genus: this is supposed to be a native of Egypt, and introduced into France about the year

1725, from whence it came to England in 1740. Its sweet odour, that made it a *darling* on the Continent, in the same degree contributed to make it a favourite amongst us; and it is now so universally cultivated, that the drawing-room and the cottage window are alike made fragrant with its scent. It blossoms from June till the commencement of winter.

British Plants of this Order.

Botanical Generic Names.	Common Names.
98 EUPHORBIA	13 SPURGE
13 RESEDA	2 MIGNONNETTE

ORDER 4.

No British Plant of this Order.

TETRAGYNIA.

Four Pistilla.

SINGLE-SPIKED APONOGETON has a bulbous root, and is observed to be common in the fields that are flooded for Rice in the East Indies. Of this Genus there are three species.

ORDER 5.

No British Plant of this Order.

PENTAGYNIA.

Five Pistilla.

GLINUS is the only unequivocal Genus of this Order, of which there is no figure extant, nor is there any specimen of the plant in England.

ORDER 6.

DODECAGYNIA.

From twelve to twenty Pistilla.

COMMON HOUSE-LEEK. This is the only Genus belonging to this Order, of which there are fourteen species. This is the only species which is a native of Great Britain. It has a perennial fibrous root, and blossoms in July. Haller, [m] who has minutely described this plant, found it in its wild state on the Alps. It is common in most parts of Europe, on the roofs of buildings, but there not properly indigenous. It is a native of some parts of Europe on rocks; it was formerly used internally as a medicine, and applied externally in burns and inflammations.

The House-leek, in common with other herbaceous perennials, is similar to evergreen trees; its succulent leaves resisting the severity of winter. The leaves of some plants of this kind are so replete with juices, that they can even dispense with the earth for a time, imbibing sufficient humidity from the atmosphere for the purposes of vegetation. It is for this reason that, unless in extremely hot weather, gardeners seldom water succulent plants, as the Aloe, which rot when they are moistened, if the sun does not quickly dry them up.

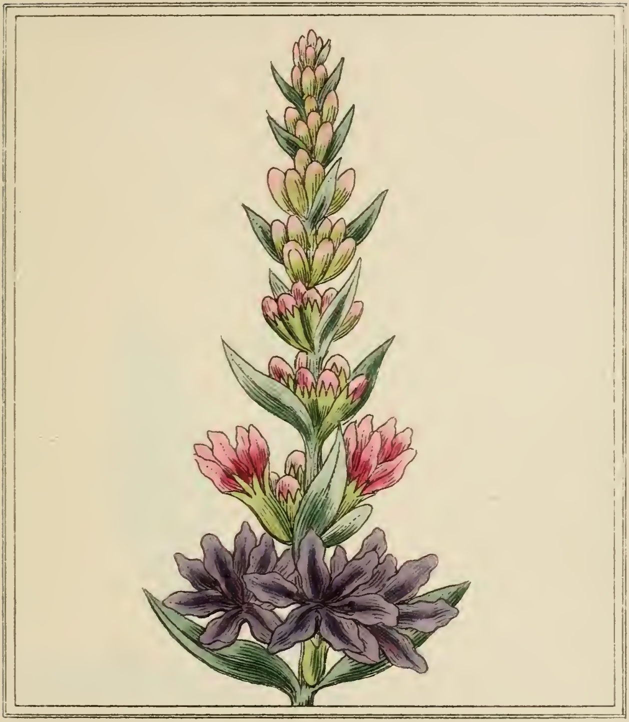
---

[m] Albert Haller was the son of a citizen, and Advocate of Berne, in Switzerland, where he was born in October 1708. The accounts of his early display of talents are as extraordinary as almost any upon record. In his fifth year he was accustomed to write down all the new words he heard in the course of the day. At the age of ten he could translate from the Greek, and compiled for his own use a Chaldaic Grammar, and a Greek and Hebrew Dictionary. As he advanced in years he rapidly advanced in acquirements and maturity of judgment; was one of the most illustrious literary characters of his age, and as an anatomist, physiologist, and botanist, he was of the first class. He died December 12, 1777, in the seventieth year of his age.

CLASS XI

ORDER 1

PURPLE LOOSESTRIFE

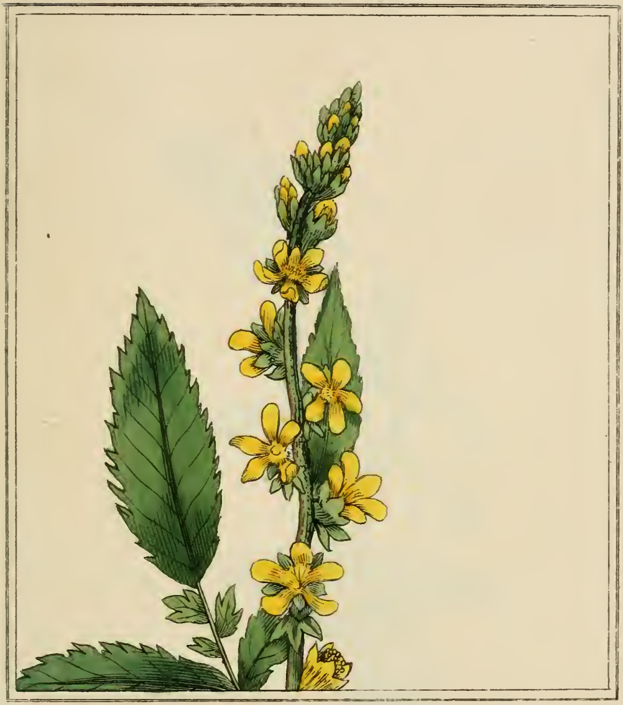


LȲTHRUM SALICARĬA

CLASS XI

ORDER 2

COMMON AGRIMONY

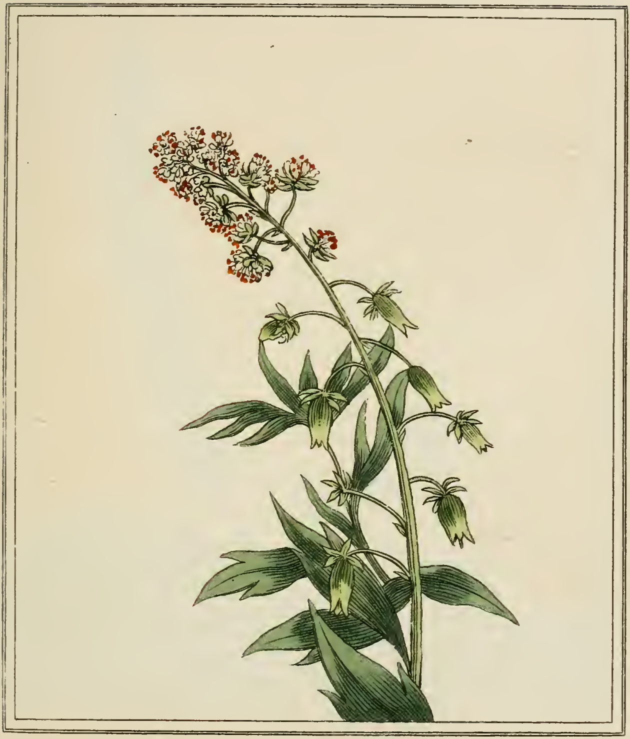


AGRIMONĬA EUPATORĬA

CLASS XI

ORDER 3

MIGNONNETTE

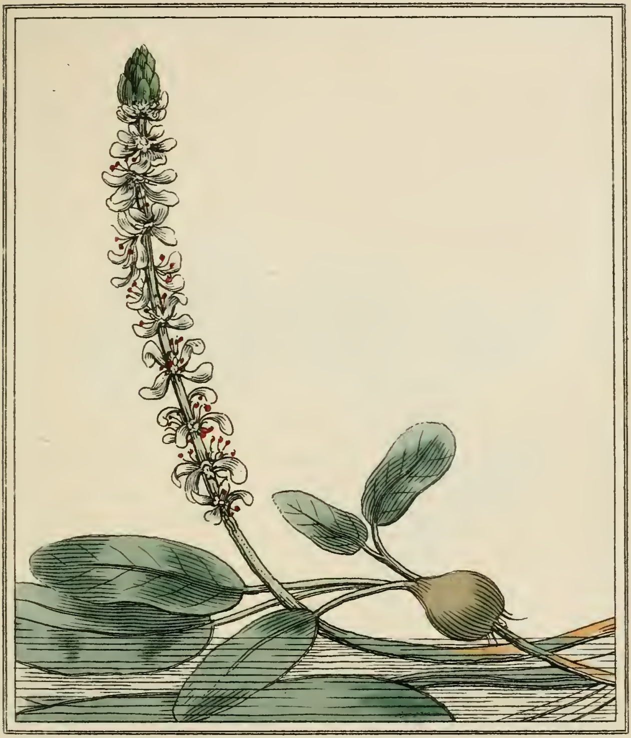


RESĒDA ODORĀTA

CLASS XI

ORDER 4

SINGLE-SPIKED APONOGETON

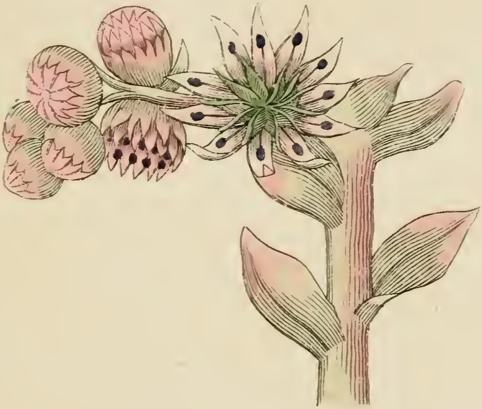


APONOGĒTON MONOSTACHY̆ON

CLASS XI

ORDER 6

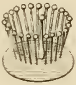
COMMON HOUSELEEK



SEMPERVĪVUM TECTŌRUM

CLASS

XII

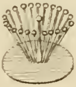


ICOSANDRIA

Inserted on the Calyx or Corolla

Twenty or more Stamina

XIII



POLYANDRIA

Inserted not on the Calyx or Corolla

but on the Receptaculum

THE CHARACTER OF CLASS XII. XIII.

ICOSANDRIA.

CLASS XII.

TWENTY STAMINA.

This Class has three Orders.

This Class is said to have twenty stamina, but the precision of the number is not of so much importance as their insertion into the Calyx, which, though an additional circumstance, is essential to the character of the Class.

ORDER I.

MONOGYNIA.

One Pistillum.

CHERRY LAUREL. This plant is a native of the mountainous parts of Persia, and is supposed to have been first cultivated in Europe in 1570. It blossoms in April, and in the autumn produces a black berry somewhat like a cherry or small plum; hence it has been classed by Linnæus with the Genus *Prunus,* under which head it is to be found in modern botanical works. In England it was a scarce plant in the reign of Charles I, and a merchant who possessed one in his garden at Highgate, in the year 1629, defended it every winter from the severity of the cold by covering it with a blanket. This fact is recorded oy Parkinson,[n] and use has been made of it by physiologists to shew that plants become inured to a climate different from their own; but I am informed by a scientific and practical man, whose opinion and experience is founded upon a knowledge of more than seventy years, that the inference is incorrect. That Clusius first preserved this plant in a stove at Vienna, there can be no doubt; but even at this day it is a very common error with nurserymen, when they receive plants or seeds from a hot country, to suppose that their habit requires a stove; and thus it happens that seeds which come from the East and the West Indies are oftentimes put to grow in our stoves, and cultivated in the same manner for many years, from the supposition that they require more than an ordinary degree of heat, till by some accident it is found that they will endure cold, and then it is said that the plant is hardened to our climate. Seeds brought from Canton to England are uniformly sown in our Hot-houses, without inquiry, whether the plants grew wild in the neighbourhood of that city, or under the great wall that divides that vast empire from Tartary. The degree of cold any plant is found to bear after fifty years growth in a foreign country, is the same as the same species will bear on its first importation, as I am informed: that individual plants should not acquire habits, in some degree, as individual animals do, I see no reason, on philosophical principles; but it is difficult to conceive how a species can be made to change its nature; and all opinions concerning such changes seem to be without sufficient foundation.

---

[n] John Parkinson was an English botanist, born in 1567. He was an apothecary in London, and eminent in his profession. His garden was well stored with rare plants, and he became botanist to King Charles I. He died about 1645. Parkinson was the first author who described and figured the subjects of the flower garden. He published in 1640 his "Theatrum Botanicum, or Theatre of Plants," folio.

From the leaves of the Cherry Laurel, by distillation, the strongest vegetable poison is produced that we are acquainted with; it was first discovered in the year 1728, and as the facts are extremely interesting, I will transcribe them from the 37th volume of the Philosophical Transactions, where they were originally published; and communicated to the Secretary of the Royal Society of London, by Dr. Madden, of Dublin.

"SIR,

"A very extraordinary accident that fell out here some months ago, has discovered to us a most dangerous poison, which was never before known to be so, though it has been in frequent use amongst us. The thing I mean is a simple water distilled from the leaves of the *Lauro-Cerasus.*

"It has the smell of the Bitter Almond, or Peach-kernel, and has been for many years in frequent use among our housewives and cooks, to give an agreeable flavour to their creams and puddings. It has also been much in use among our drinkers of drams; and the proportion they generally use it in, has been one part of Laurel-water to four of Brandy.

"Nor has this practice (however frequent) ever been attended with any apparent ill consequences till some time in the month of September 1728, when it happened that one Martha Boyce, a servant, who lived with a person who sold great quantities of this water, got a bottle of it from her mistress, and gave it to her mother, Anne Boyce, as a very rich cordial.

"Anne Boyce made a present of it to Frances Eaton, her sister, who was a shopkeeper in the town, and who she thought might oblige her customers with it. Accordingly in a few days she gave about two ounces of the water to a woman called Mary Whaley, who had bought some goods of her.

"Mary Whaley drank about two-thirds of what was filled out, and went away. Frances Eaton drank the rest. Mary Whaley went to another shop to buy somewhat else, and in about a quarter of an hour after she had drank the water (as I am informed), she complained of a violent disorder in her stomach. She was carried home, and from that time she lost her speech, and died in about an hour.

"The shopkeeper, Frances Eaton, sent word to her sister Anne Boyce of what had happened, who came to her upon the message, and affirmed that it was not possible the cordial (as she called it) could have occasioned the death of the woman; and to convince her, she filled out about three spoonfuls of it and drank it. She continued talking with Frances Eaton about two minutes longer, and so earnest to persuade her of the liquor's being inoffensive, that she filled out two spoonfuls more, which she drank off likewise. She was hardly well seated in her chair, when she died."

After repeated experiments by some Members of the Royal Society to shew the deadly effects of this poison, the Secretary concludes—

"Thus we find this simple water, distilled from a vegetable, equally mortal with the bite of the Rattlesnake, and more quick in its operation than any mineral poison; and though it may not immediately bring on death, when taken in small quantities, yet an habitual use of it, however disguised with other compounds, must certainly be prejudicial and unwholesome, and, in weakly persons, must hasten death.

"I am informed that a gentleman and his wife, who used for several years to drink daily a dram or two of the brandy into which laurel berries were infused, both died paralytic, having lost their speech some time before." *August* 24, 1731.

It has been remarked as a curious fact in nature, that whenever Stamina are inserted into the Calyx, whether the number be few or many, the fruit has been found to be invariably wholesome; and although, from these remarks, there would seem to be an exception to that rule, yet I suspect that Laurel berries are in no other way unwholesome, than in as much as they may partake of the peculiar secretions of the leaves; not that I recommend them to be eaten, since we have plenty of other fruits, but I offer this suggestion to prevent the general rule from being too hastily overthrown; for the leaves of the Peach-tree, as well as the kernels of the Apricot, I am persuaded, contain the same poisonous principle with Laurel leaves, if distilled and taken in a sufficient quantity; and this remark I am the more induced to make, as Rattifia is a common cordial at this time, and taken without suspicion that there is any latent principle in it prejudicial to health.

ORDER 2.

PENTAGYNIA.

FivePistilla.*

SERVICE TREE is a native of the warmer parts of Europe, where it becomes a large and lofty tree.

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* Dr. Smith makes this Order to include such plants as have from two to five pistilla, and which from accidental

Ray says that it has been observed to grow in many places in the mountainous parts of Cornwall; and by Dr. Plot, to grow wild in the Moorlands in Staffordshire. There is a solitary tree in the middle of the Forest of Wire, near Bewdley, but there are evident marks of that tree having been planted there.

The tree blossoms in May, and the fruit, in taste, is somewhat like a medlar, but inferior.

I have called it *Pyrus Domestica,* in conformity to the opinion of Dr. Smith and Crantz, and in which Professor Martyn concurs, though, in his Dictionary, he has continued the name of *Sorbus.*

Of this Order is the Pear and Apple tree, both classed by Linnæus in two species under the Genus Pyrus, *Pyrus communis* and *Pyrus malus.*[o] Of Apples and Pears the kinds are very numerous, but that which makes an obvious difference in the

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luxuriance may occasionally have one or two more. In the Apple, Pear, and Medlar, some species of the same Genus have five, others three, two, or only one pistillum, and a corresponding number of seeds.

[o] Apples were common in England before the arrival of the Romans, and in the Welsh, Cornish, Armorican, and Irish, the word apple, has one common etymology. The present site of Glastonbury was distinguished before the arrival of the Romans by the title of Avallonia, or the Apple-orchard. Before the third century the fruit seems to have been in general request over the Island. In the sixth century Apples were praised by *Myrdkin Wylht,* a Welsh bard.

appearance or flavour of the fruit, is not considered by Botanists as sufficiently constant to characterise separate species. The Golden Pippin, the Nonpareil, and common Crab, are therefore considered as only three varieties of the same species; and in like manner all the different kinds of Pears, but as so many varieties from one parent tree.

In the economy of Nature, the seed is all that the Naturalist has to consider as essential to the reproduction of the plant, and the flavour of the seed or pulp that surrounds it, is a circumstance not taken into the account. Nevertheless, these different fruits, though originally produced, as is supposed, by accident, are reproduced in a state of nature, by offsets or suckers; and by artificial means, by layers, grafts, and buds; and, as far as we know, may continue to be so reproduced to the end of time. The true Bread-fruit-tree and the Plantain, which produce the most delicious and nourishing food to the natives of those countries where they grow spontaneously, are entirely reproduced by suckers, and no diminution of the quality of the fruit is suspected. Our Golden Pippin, which in Herefordshire is supposed to be worn out, grows in the Stable yard in St. James's in the same perfection it ever did, as far as can be ascertained, and the fruit annually produced, as large and well flavoured: but a change of soil is sometimes necessary to renovate the produce, even of flowers, as well as fruits, of every kind. The whole system of agriculture, as practised in Europe, is conducted upon this principle, with a full conviction of its importance; and with respect to this favourite apple, in common with others, no attention has been paid to the situation where it is planted; a stiff clay, or a low and damp situation, are equally uncongenial to its nature, but when placed in a dry or loamy soil it returns to its former vigour, and according to the season, its fruit is kind and of the same goodness as before.

The canker, so fatal a disease among trees, is no indication of their decrepitude from old age; it seems to belong to some latent cause of which we are ignorant; it is probably produced from the peculiar nature of the soil, for, in many instances, I have traced it down the albernum to the root. Young seedling trees of the thorny and hardy crab, will often canker after putting forth strong and healthy shoots, for three or four years, particularly if the situation be a wet and cold clay.[p]

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[p] Another cause of the decay of fruit-trees is, that it is customary to graft with wood less healthy than other branches of the tree, because it is believed to produce fruit sooner than young, kind, and vigorous shoots.

Among timber trees the common Elm, *Ulmus campestris*, is a good example of a tree that has been constantly produced by grafts and suckers, which is at this day as healthy and fine a tree as the same species at any former time, nor at all degenerated, as we have any reason to believe; while the Wych Elm, *Ulmus montana*, which is constantly produced by seed, is still an inferior

British Plants of this Order.

Botanical Generic Names.	Common Names.
9 Mespilus.........	1 Medlar-tree
13 Pyrus............	2 Pear and Apple-tree
3 Sorbus..........	3 Service-tree
22 Spiræa..........	3 Meadow-sweet

ORDER 3.

POLYGYNIA.

Pistilla numerous and indefinite.

APPLE ROSE blossoms in June, and grows wild in the north of England, and in some parts of Scotland. It grows to the height of five or six feet; the branches are upright and short. The prickles [q] on the stem of the branches are scattered, small, awl-shaped, and nearly straight: the Corolla is of a full rose-colour, and not very odoriferous. Of this extensive Genus the Provence and the Damask Rose are

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tree, and only of value for producing timber when grafted with the common Elm.

The common Elm when grafted on the Wych Elm will become timber many years sooner than if raised by layers, and grow to a greater size.

[q] The distinction between a Prickle and a Thorn is, that the prickle is produced from the bark, and the thorn grows out of the wood.

the more fragrant. The Moss Rose is supposed to be only a variety of the Provence Rose, and not a separate species; but I have seen a single-moss-rose which would seem to militate against that opinion. The damask Rose produces white and red flowers on the same tree, and has been celebrated in our history as the emblems of the houses of York and Lancaster, when those families contended for the crown: the White Rose distinguished the partisans of the House of York; the red, the party of Lancaster. There are two varieties also of this Rose which blossom more than once a year; the one is commonly called the Monthly Rose, and the other has been celebrated by the Latin poets for blossoming twice a year, and is called the Pæstan Rose.[r]

Water distilled from the wild rose is said to be more fragrant than the common Rose-water. Haller says of it, "Fragrantia ejus olei omnia alia odoramenta superat"——

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[r] Forsitan et pingues hortos quæ cura colendi
Ornaret, canerem, biferique rosaria Pæsti;
Virg. Georg. Lib. iv.

Fragravit ore quod rosarium Pæsti
Martial, Lib. v. Epig. 37.

Prataque nec bifero cessura rosaria Pæsti
Ibid. Lib. xii. Epig. 31.

Pæstum was anciently called Sistilis, afterwards changed to Possidonia, and then to Pæstum, about the year 272 before Christ, when it was subdued by the Romans; about which time

Of all the ornamental plants that grow, there is none of such universal admiration as this; the name is even too remote for the fanciful exercise of derivation. Poets and Moralists have alike recourse to it: Love, Youth, and Beauty with all its charms, by turns find apt emblems in the Rose.

Go, lovely Rose,
Tell her that wastes her time and me,
That now she knows,
When I resemble her to thee,
How sweet and fair she seems to be.

Then die, that she
The common fate of all things rare
May read in thee;
How small a part of time they share,
That are so wondrous sweet and fair.

British Plants of this Order.

Botanical Generic Names.	Common Names.
1 COMARUM	1 MARSHLOCKS
2 DRYAS	1 AVENS

the city lost its importance; and a fragrant Rose that blossomed twice a year was all that was left in the Augustan age, to give it note with those who had reduced it to vassalage; yet, after a lapse of more than two thousand years, its magnificent ruins still remain to shew, that it once deserved higher commendation.

Botanical Generic Names.	Common Names.
1 FRAGARIA[s]	1 STRAWBERRY
9 GEUM	3 HERB BENNET
32 POTENTILLA	8 CINQUEFOIL
ROSA[t]	5 ROSE
32 RUBUS	6 BRAMBLE
2 TORMENTILLA	2 TORMENTILLA

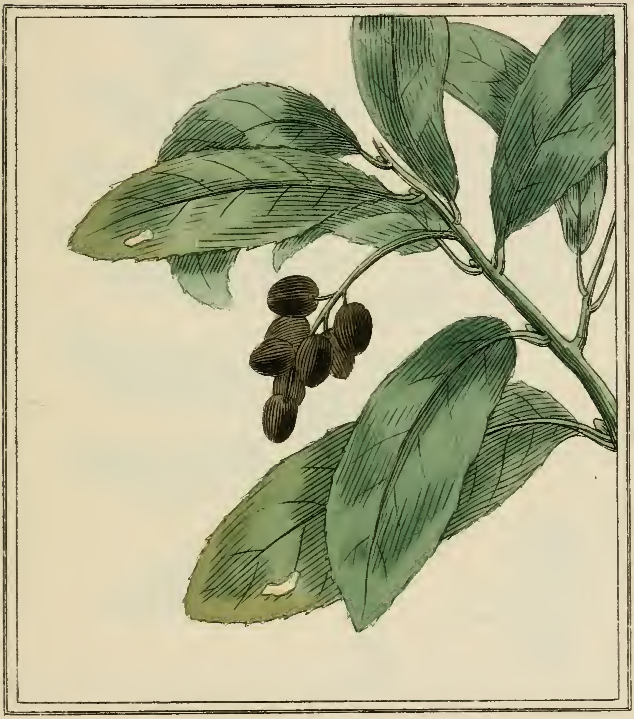
[s] *Fragaria sterilis*, or Barren strawberry, is rather a Potentilla with a strawberry-leaf than a Fragaria.

[t] Though this Genus can scarcely be mistaken, as every one knows a Rose at first sight, yet it is very difficult to determine the number of species, and to ascertain what is a species and what a variety. Professor Martyn makes only forty, while Mess. Lee and Kennedy publish a catalogue of no less than 315 species of permanent varieties of this flower.

CLASS XII

ORDER 1

CHERRY LAUREL

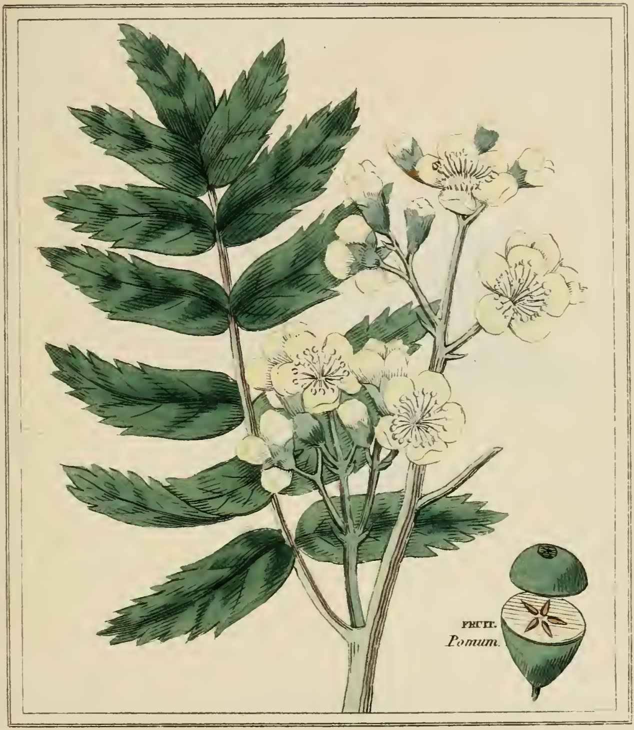


PRŪNUS LAŪRO-CERĂSUS

CLASS XII

ORDER 2

SERVICE TREE



PȲRUS DOMESTĬCA

POLYANDRIA.

CLASS XIII.

STAMINA NUMEROUS AND INDEFINITE.

This Class has seven Orders.

BESIDES the indefinite number of stamina, usually more than twenty,[u] which is the character of this Class, they must be inserted in the Receptaculum, as Class XII. requires them to be inserted into the Calyx.

ORDER I.

MONOGYNIA.

One Pistillum.

WHITE WATER LILY. This plant grows in rivers and large pools, in dark mud, and blossoms in the middle of summer very plentifully: the flower has much the air of a tropical production; but it has no scent, and fades very soon after it is gathered.

The laws of the vegetable world are perhaps as numerous and infinitely various as of the other kingdoms of nature, though less obvious to common observers. If plants do not possess sensibility they often possess irritability, and habits very analogous to those of animal life. Linnæus has enumerated forty six different flowers that close and open at certain hours of the day. Some plants fold their leaves, or the petals of their flowers, as if to take rest, or prevent being stimulated by external bodies, some in the day only, and others only in the night; and this Linnæus calls the sleep of plants, from the apparent resemblance to that state among animals. The White Water Lily closes its flower in the evening, and when the sun returns expands itself again.

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[u] The filaments of the Pæony and the Tea blossom are from 250 to 300, and those of the Pæony stand in three circles round the Germen. See Pistilla of the Pæony in the plate shewing the character and appearance of the stigma in different plants.

LOTUS, *Nymphæa Lotus*. As I have before observed, *Lotus* is a name that the Ancients appear to have given to several different kinds of plants. Pliny distinctly mentions two different trees so called, as well as herbaceous plants, of which I have no doubt this *Nymphæa* is one. This is the plant described by Sir William Jones, in his "Botanical observations on select Indian plants,"[x] whose flowers are either of a beautiful azure, or, rose-coloured, and whose seeds, numerous and minute, are eaten in India as well as the bulb of the root. The new-blown flowers of the rose-coloured Lotus have a most agreeable fragrance. There are also yellow and white flowers, which have less odour. This is the plant of poetical honour in the East, and which is so often introduced in *Gitagovinda*, or the songs of *Jayadéva.*[y] I am also of opinion that this is the same plant, thus described by Herodotus, and Pliny:

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[x] The annexed figure was copied from the *Hortus Malabaricus* of the celebrated Rhede, Tom. xi. Pl. 26. referred to by Sir William Jones.

"To remedy this scarcity of provisions, they (the Egyptians of the marshes) have found out these further resources. When the river becomes full, and inundates the plains, like a sea, there spring up in the water numbers of Lilies, which the Egyptians call Lotus. These they gather and dry in the sun: then, pounding *that which comes from the middle of the Lotus,* and which is like a poppy, they make from it bread, baked with fire. The root also of this Lotus is eatable, and is moderately sweet; it is round, and about the size of an apple."[z]

Pliny after describing the tree lotus, says, "But there is an herb of the same name, and in Egypt it grows up with an herbaceous stem, as a marsh plant. When the overflowing waters of the Nile retire, it comes up with a stem like the Egyptian bean,[a] the petals crowded thick and close, only shorter and narrower, having a capsula with a serrated stigma, in every respect like a Poppy, containing grains like millet. The natives put these Capsulæ in heaps to putrify; soon after, they separate, wash, dry, and pound them, and of the seeds they make bread. There is a further circumstance related concerning this plant of a very remarkable nature; that the Poppy-like flowers close up with the setting sun and the petals entirely cover the capsula, but at sun-rise they open again, and so on till they become ripe, and the blossom, which is white, falls off." [b]

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[y] In this composition the Lotus and Water Lily are mentioned in almost every page, and with the epithets blue and red, referring to the flower, without distinction; translated by Sir W. Jones, "O lotus-eyed God, follow her, who dispels thy care"—"Thine eyes, which nature formed like blue water-lilies, are become, through thy resentment, like petals of the crimson lotus"—"Thine eye outshines the blue lotus"—"From his graceful waist flowed a pale yellow robe, which resembled the golden dust of the water-lily, scattered over its blue petals," &c.

[z] Herodotus Lib. II. (Euterpe) c. 92. Ἀτὰρ πρὸς εὐτελείην τῶν σιτίων——

Pliny again, in another part of his work,[c] says, "Those who think that there is only a Tree-lotus, may be refuted on Homer's authority alone, for among other herbs produced for the pleasure of the Gods the Lotus is the first named.—There is a kind of Lotus named *Lotometra,* which is produced from the cultivated Lotus, from whose seed, which is like millet, the Egyptian shepherds make bread, commonly mixed up with water or milk. It is asserted that no bread can be more wholesome or light while it is warm, but when cold it is more difficult of digestion, and becomes heavier. For this reason, those who live upon it are not troubled with many internal complaints; therefore it is held as a remedy for them."[d]

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[a] The plant here referred to is the Cyamus Nelumbo See page 149.

[b] Pliny Lib. xiii. c. 17. *De arbore loto.*

[c] Lib. xxii. c. 21.

RED HORNED-POPPY, *Glaucium phœnicium*. This plant grows wild in sandy corn-fields, and blossoms in June and July: the flowers are of very short duration, often not exceeding half a day, yet produced in long succession. It was upon the flower of this plant that Linnæus made repeated experiments to shew the importance of Stamina and Pistilla to the production of perfect seed, as already mentioned, page 13.

DWARF CISTUS, *Cistus helianthemum.* Of this Genus there are sixty-six species, in general, esteemed for their beauty, and cultivated in our gardens. Though this species cannot vie with many of those which are produced in warmer climates, yet it is one of our ornamental native plants. It is common in chalky soils, and highly ornamental to rocky situations; it is hardy, and easily propagated, either by seeds or cuttings, and continues for the greatest part of the summer daily to put forth new blossoms. The petals are yellow, and Linnæus has remarked, that they have sometimes an orange-coloured spot at their base. At Leven Grove in Yorkshire, and Benton in Northumberland, I have seen the flower of a dingy red, and the stamina possessing more irritability than any I have noticed of a yellow colour. The leaves have been observed to vary much in breadth.

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[d] Constat, eos qui illo vivant, nec dysenteria, nec tenesmo, neque aliis morbis ventris infestari. Itaque inter remedia eorum habetur. Lib. xxii. C. 21.

This flower has that remarkable character which I have alluded to, page 83—the stamina gradually retiring from the Pistillum which they surround, when slightly touched at the base; and this is the only species that has been hitherto discovered to have this singular property.

British Plants of this Order.

Botanical Generic Names.	Common Names.
4 ACTÆA	1 BANE-BERRY
66 CISTUS	6 CISTUS
5 CHELIDONIUM	4 CELANDINE
6 NYMPHÆA	2 WATER-LILY
9 PAPAVER	7 POPPY
4 TILIA	1 LIME

ORDER 2.

DIGYNIA.
Two Pistilla.

ENTIRE-LEAVED PÆONY. This plant is named after Pæon, a famous physician of antiquity. Of this Genus there are five species, variable in the number of the pistilla: it blossoms in May and June; it is a native of several parts of Europe, and Dr. Smith supposes it also to be a native of England. This species in its wild state, is probably, when cultivated, the double-leaved Pæony of our gardens.

There is a superstitious opinion prevails concerning the efficacy of the root of this plant to facilitate the growth of children's teeth: bits of it are dried and rubbed smooth, and strung and sold by the name of Anodyne Necklaces, and the seeds are sometimes employed for the same purpose.

This is the only plant that can be supposed to be english that has been arranged under this Order.

ORDER 3.

No British Plant of this Order.

TRIGYNIA.

Three Pistilla.

TEA TREE. This plant has been placed by Linnæus in the first Order of this Class, from considering the styles as united; but on consulting the best botanists of our time, I find it is now thought to be indifferent whether it be placed in the first, or the third Order; I have therefore chosen the latter; since it appears, from the best figures of the flower, and the most authentic descriptions of it, that as the seeds advance to maturity the styles separate from each other down to the Germen (as in fig. 2), and wither upon it after the petals and stamina have fallen off; and that although they are united in an early state, and perhaps in some degree cohere, (as in fig. 1) it seems evident that they have their constituent parts distinct; and as Linnæus, in the nineteenth Class of his System, has considered the closest adhesion of the antheræ only as a union of five distinct antheræ, I conceive, that, without departing from his own principles, the Tea Tree may be kept here with stricter propriety than in the first Order.

This plant is a native of China and Japan, and in those countries only cultivated for use. In China it is cultivated in the open fields, in every latitude between Canton and Pekin; but the best tea is said to grow in a mild and temperate climate in the country about Nankin. It delights in sloping banks of hills facing the south, especially in the neighbourhood of rivers and rivulets.

In Japan the tea which is most esteemed grows in the neighbourhood of a small town called Udsi, situated near the sea. Here is a celebrated mountain of the same name, the whole of which is occupied in the culture of the tea for the Emperor's use. This mountain is entirely surrounded with a wide ditch to keep out both men and beasts. The plantations are made in regular rows, and when the leaves are gathered, the men employed for that purpose wear gloves, and are obliged to bathe two or three times a day, lest the delicate flavour of the leaf should be injured in gathering.

In other parts of this country the tea is usually sown in the month of February, in the borders of fields which are cultivated with other produce; not in a continued hedge, but at moderate intervals, both that its shade may not be injurious to the general crop, and that the leaves may be the more easily collected. As the seeds are very subject to be damaged, from six to twelve are put into one hole, a fifth part not being expected to grow. When the tree is three years old the leaves may be plucked; when it is seven years old it no longer bears any quantity, and is then usually cut down to the root, when the stool sends forth many new shoots, which afford a plentiful supply. Sometimes this operation is deferred till the tenth year.

The tea is gathered at three separate times: the tenderest leaves, of but a few days growth, are gathered in February or the beginning of March; the second gathering is in the beginning of April; and the third about June, when the leaves are full grown. The tea is afterwards prepared by drying it in a stove in shallow iron pans; and the supposition of its ever being dried on copper, to give a more beautiful green to the leaves, is entirely void of foundation.

Of this plant it is generally believed there is only one species; the difference of green and Bohea tea depending upon the nature of the soil, the culture, and the manner of drying the leaves. It has been observed that the green-tree, planted in the Bohea country, will, produce Bohea-tea, and on the contrary. The tree is an evergreen, and grows to about six feet in height, according to the best information we have upon the subject.

Tea was first introduced into Europe by the Dutch East India Company in 1641, and a small quantity was brought to England from Holland about the year 1666, by Lord Arlington and Lord Ossery, from whom it soon became known to the people of fashion, and its use ever since has become general. In China the use of tea is derived from very remote antiquity, and is so universal among all ranks of people in that vast empire, that, we are assured by Sir Geo. Staunton, if the Europeans were entirely to cease from trading in it, it would very little affect the price of tea in China, though, according to Dr. Lettsom's Tables, it appears that the quantity of tea imported into Europe from 1776 to 1791, amounted annually to 15, 29, 25, 29, and even to 36 millions of pounds.

John Ellis, Esq. well known for his excellent works on corals and corallines, previous to the year 1768, set several tea seeds, sent to him from China, in pots in the open air in London, from which he raised one plant; and this was probably the first tea plant ever raised in England. In the year 1771, a tea tree blossomed for the first time in England, at Sion House, in the months of October and November.[e]

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[e] The leaves and young stems of a tree of a very different kind to the Tea-tree of the East, are exclusively used as Tea in Paraguay and Chili. The tree is but little known in Europe, though of the first importance in that part of South America. It is described by Azara to be of the size of a middling Orange-tree, and by his editor Walckenaer supposed to be the *Psoralea glandulosa* of Linnæus. I have chewed the leaves and dryed stems bruised together of this Paraguay tea, and the taste is as agreeable as our oriental tea, tasted in the same way. For the

Much has been said about the unwholesomeness of this plant, and perhaps truly, with respect to some of its properties; but its refreshing quality is so agreeable, and the harm arising from it estimated with so much uncertainty, that in England it has become general, without our being aware of any serious evil from its use.

It has been much the habit of studious men to indulge in drinking tea. I once called upon the great Professor Porson at five o'clock, when I myself was going to dinner, and found him in his room alone, sitting over his books, with a disorderly tea equipage on the table, and his tea-pot standing on a trevet before the fire. Dr. Johnson would sometimes drink more than twenty cups at a sitting; and he tells us himself, that he was a ' hardened and shameless tea-drinker; who for twenty years diluted his meals with only the infusion of this fascinating plant; whose kettle had scarcely time to cool; who with tea amused the evening, with tea solaced the midnight, and with tea welcomed the morning.' Nevertheless, according to the same enthusiastic admirer of it, its proper use is to amuse the idle, to relax the studious, and to dilute the full meals of those who cannot use exercise, and will not use abstinence.

Of this Order is the Genus *Delphinium*, of which

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description of this plant, see Martino Dobrizhoffer, *Historia de Abiponibus*, tom. iii. 8vo. and, Voyages dans L'Amérique Meridionale, par Don Félix de Azara, tom. i. p. 120.

there are eleven species, but our common Lark-spur, *Delphinium consolida*, is the only species of English growth

ORDER 4.

No British Plant of this Order.

TETRAGYNIA.

Four Pistilla.

Except TETRACESA, Dr. Smith is of opinion, that all the other examples are doubtful which have been hitherto placed in this Order, and a specimen of this plant I have not been able to obtain.

ORDER 5.

PENTAGYNIA.

Five Pistilla.

COMMON FENNEL-FLOWER. Of this plant there are five species. It is a native of the south of Europe in corn fields, and blossoms from June to September. It appears to have been first introduced into England, according to Lobel, in the year 1570. Some *Nigellæ* have ten pistilla.

The Genus *Aquilegia*, is put here for the want of a better place, of which there are five species; but the common Columbine, *Aquilegia vulgaris*, is the only species which is native of Great Britain.

ORDER 6.

HEXAGYNIA.

Six Pistilla.

WATER ALOE. Of this Genus there are three species, but this is the only species indigenous to Great Britain, and the only British plant of this Order. It is rarely found in any other part of England, than Lincolnshire, Cambridgeshire, and Norfolk, where it grows in deep ditches of the fens, sometimes so plentifully as to cover the whole surface, to the exclusion of all other plants. It blossoms in July. The pulp of the seed of this plant in its natural state is clear like the vitreous humour of the eye; in spirits of wine it becomes opaque and white like the boiled white of an egg; plunged into water, it becomes clear again.

This Genus, is nearly allied to the Frog-bit, Class XXII.

ORDER 7.

POLYGYNIA.

Pistilla numerous and indefinite.

EGYPTIAN-BEAN LILY. This plant is indigenous to still pools and recesses in the margins of running streams in the East Indies, growing in a deep muddy soil, in a depth of water not less than two or three feet, nor more than six.

When the seeds become ripe, the capsula containing them separates from its footstalk, and falls into the water with all the seeds in their respective cells, which then begin to vegetate, and thus present a cornucopia of young sprouting plants; which, after a time, loosen from their cells and take root in the mud.

This Plant is also a native of Egypt, and was common to the Nile, in the time of Herodotus, who, after speaking of the *Nymphæa Lotus*, before mentioned, which he considered as a Liliaceous plant, says; "There are likewise other Lilies like Roses: and these too grow in the River Nile; whose fructification is produced in a separate capsula, springing like a sucker from the root, in appearance exactly resembling a wasps nest. In this are a number of esculent seeds, about the size of the olive berry. These are are also eaten when tender, and dry."

This plant would seem to have been newly imported into Italy when Virgil is supposed to have written his Eclogue entitled *Polio*. It is there mentioned by the name *Colocasia*, and its general cultivation is alluded to as one of the blessings of the golden age, which, in the poet's imagination, was about to return.[g] Theophrastus, Dioscorides, and Pliny, all mention this plant; and, on the authority of the two last we are assured, that the Cyamus and Colocasia[h] are the same.

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[f] Herodotus Lib. ii. (Euterpe) Ἔστι δὲ καὶ ἄλλα κρίνεα ῥόδοισι ἐμφερέ, —— Edit. Wesselin. p. 144.

[g] At tibi prima, puer, nullo munuscula cultu,
Errantes ederas passim cum baccare, tellus,
Mixtaque ridenti colocasia fundet acantho. Ecl. iv.

[h] Ὁ δὲ Αἰγύπτιος Κύαμος ὃν ἔνιοι Ποντικὸν καλοῦσι,——

In Egypto nobilissima est Colocasia, quam Cyamon aliqui vocant.

Theophrastus says, that "this plant grows in marshes and lakes, and bears a head like a wasps nest, with one bean in each cell, appearing a little above it, in number about thirty. The flower twice as large as a poppy, and of the colour of a rose. The root, which is thicker than the largest reed, is eaten either raw, or boiled, or roasted, by the inhabitants of the marshes. It grows spontaneously in great plenty: they also sow the beans in the mud and make plantations of them. The plant grows also in Syria and Cilicia"

The peculiarity of the capsula of this plant reembling a wasps nest is so remarkable that it is impossible to mistake the ancient authors who have decribed it; but, on investigating this subject, I have found no authority for calling it a Lotus; and as that name perplexed me, and is liable to mislead others, I have rejected it altogether, and supplied its place in English by a familiar idiom agreeable to the name by which Herodotus has described it.

British Plants of this Order.

Botanical Generic Names.	Common Names.
6 ADONIS	2 PHEASANT-EYE
28 ANEMONE	5 ANEMONE

POLYANDRIA.

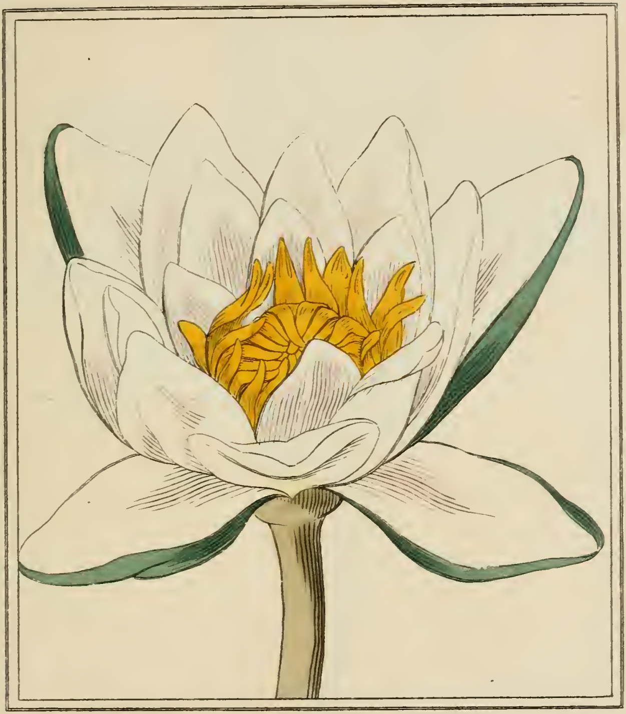
1	CALTHA[i]	1	MARCH-MARIGOLD
21	CLEMATIS	1	TRAVELLERS'-JOY
7	HELLEBORUS	2	HELLEBORE
59	RANUNCULUS	15	CROW-FOOT
22	THALICTRUM	4	RUE-WEED
2	TROLLIUS	1	GLOBE-FLOWER

[i] *Caltha pelustris* is the first flower that announces the spring in Lapland, where it begins to blossom towards the end of May. With us it usually blossoms in March or April; and in a very early spring, in the year 1775, it blossomed in February.

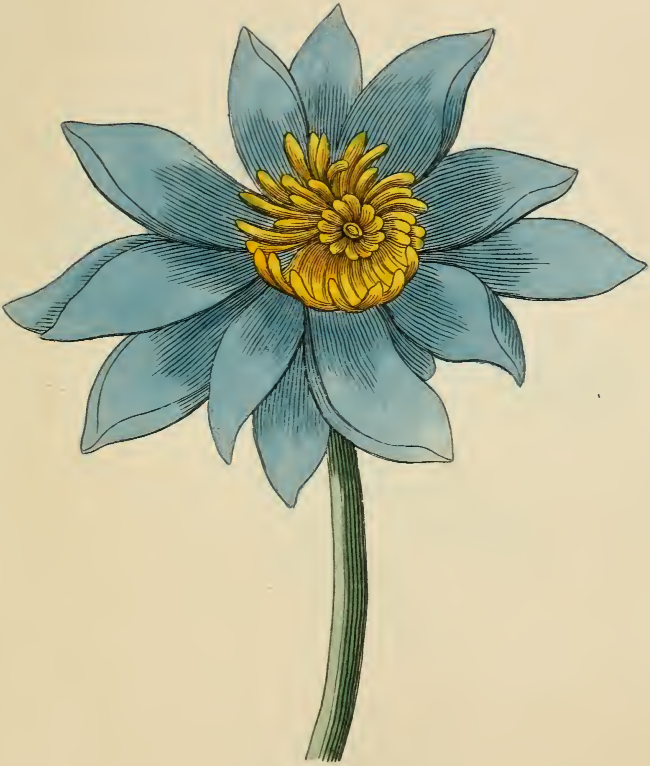
CLASS XIII

ORDER 1

WHITE WATER-LILY



NYMPHÆA ALBA

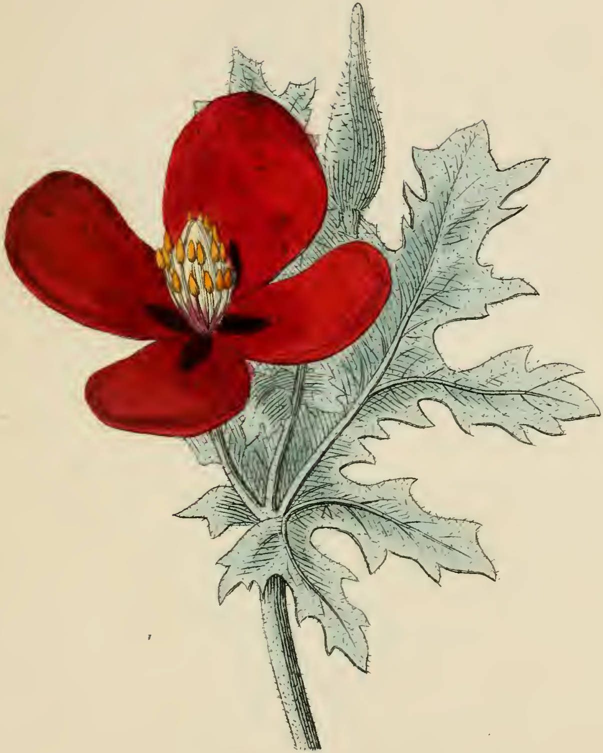


Lotus of India

NYMPHÆA LOTUS

XIII

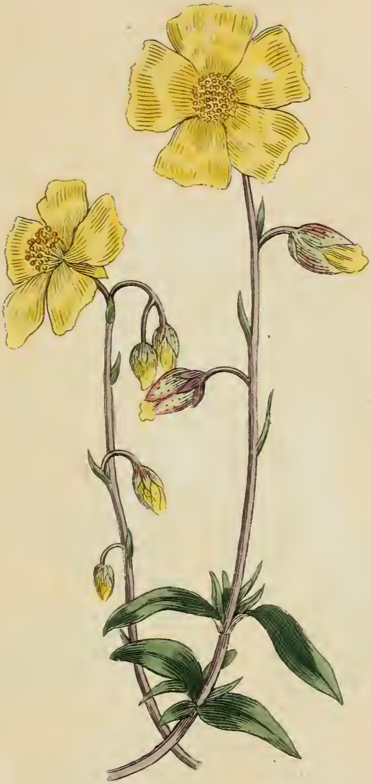
1



Red Horned-Poppy

GLAUCĬUM PHŒNICĬUM

XIII



Dwarf Cistus

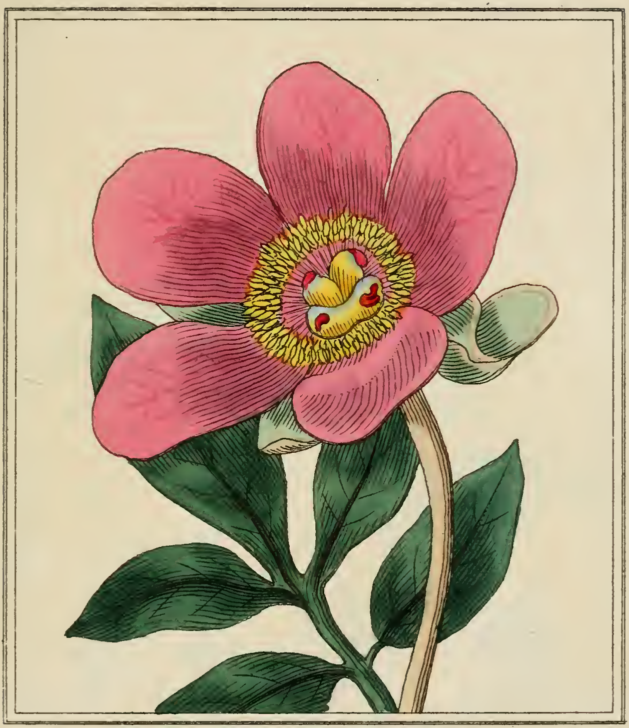
CĪSTUS HELIANTHĔMUM

XIII
1

CLASS XIII

ORDER 2

PÆONY

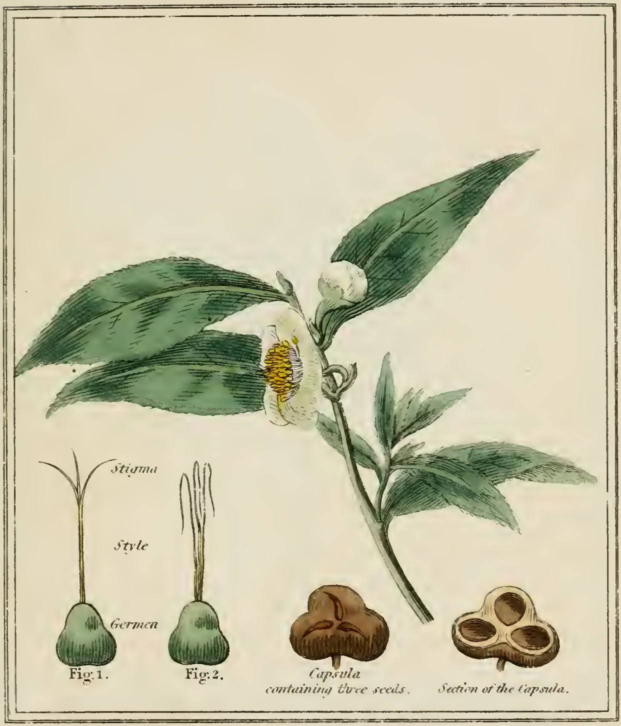


PÆONĬA CORALLĪNA

CLASS XIII

ORDER 3

TEA TREE

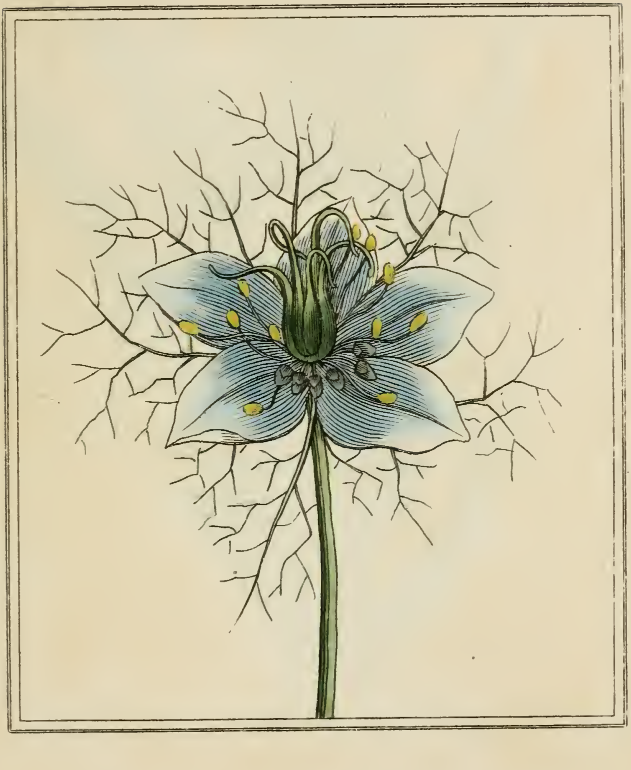

Stigma
Style
Germen
Fig. 1.
Fig. 2.
Capsula containing three seeds.
Section of the Capsula.

THEA

CLASS XIII

ORDER 5

GARDEN FENNEL-FLOWER

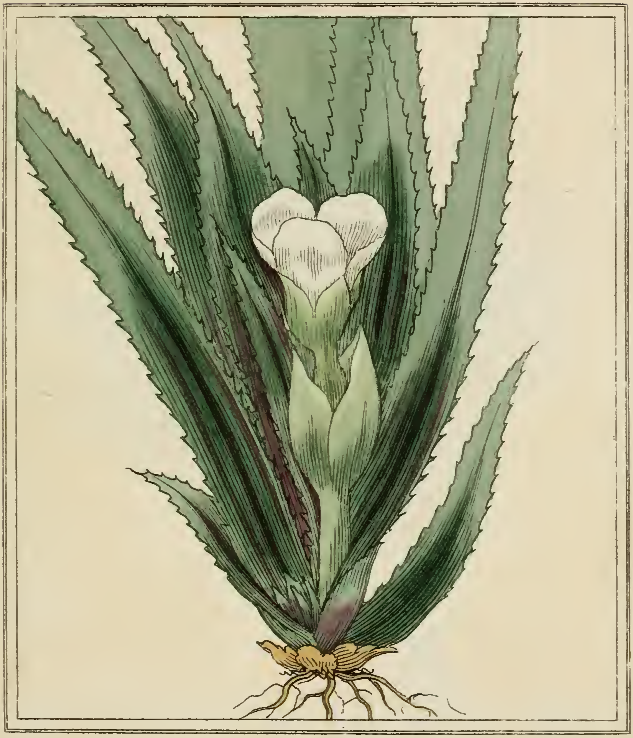


NIGĔLLA DAMASCĒNA

CLASS XIII

ORDER 6

WATER ALOE

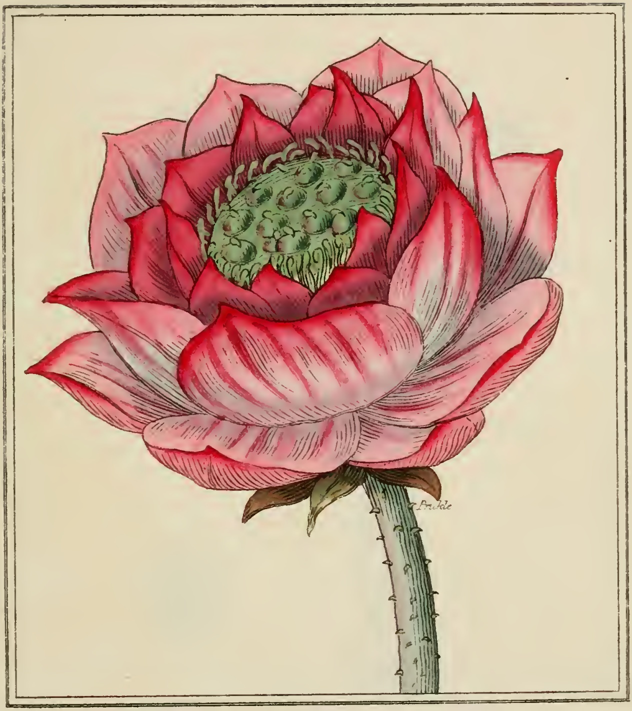


STRATIŌTES ALOĪDES

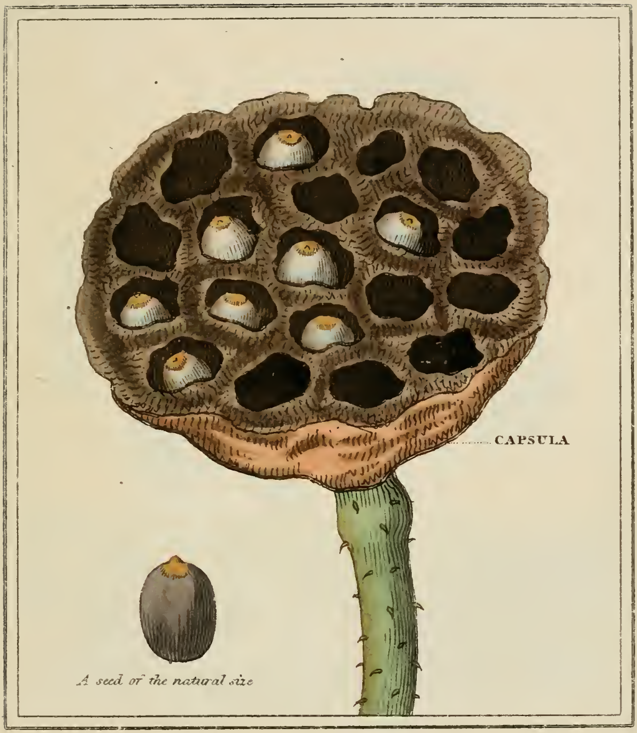
CLASS XIII

ORDER 7

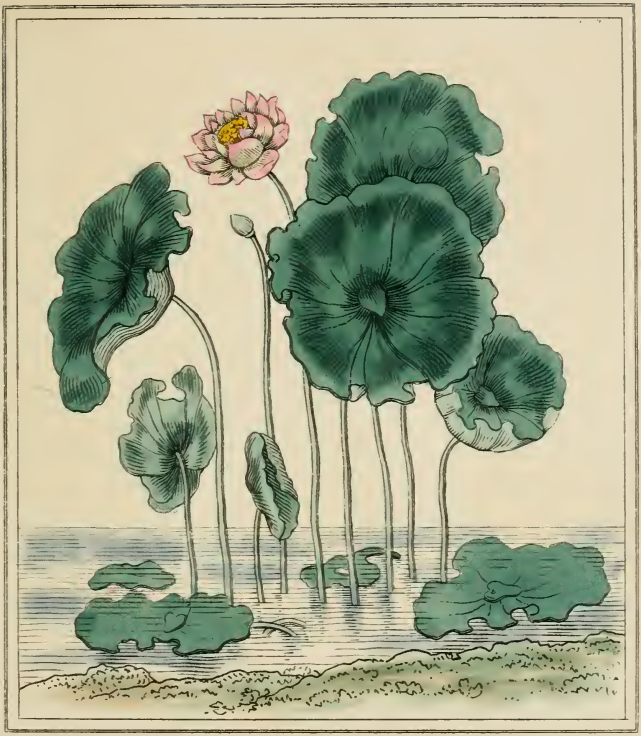
EGYPTIAN BEAN-LILY



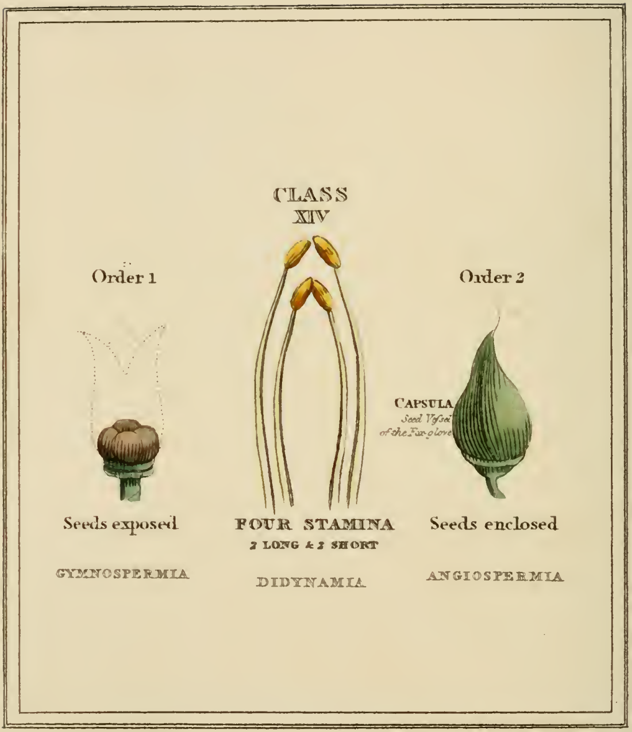
CYĂMUS NELŪMBO


CAPSULA
A seed of the natural size

A RIPE CAPSULA WITH SEEDS OF THE
CYAMUS NELUMBO



THE APPEARANCE OF THE CYAMUS NELUMBO WHEN GROWING IN THE WATER



THE CHARACTER OF THE CLASS & ORDERS OF
CLASS XIV

DIDYNAMIA.

CLASS XIV.

FOUR STAMINA, 2 LONG AND 2 SHORT.

This Class has two Orders.

This Class contains most of the labiate, ringent, or personate flowers, as the Balm, Dead-nettle, Snapdragon, Fox-glove, &c.

The Orders of this Class are named after the manner of producing their seeds. The first Order produces naked seeds at the bottom of a Calyx, usually four in number. The second order produces seeds in a pod or capsula.[a]

ORDER I.

GYMNOSPERMIA.

Seeds exposed.

GROUND-IVY is common in dry groves, about hedge banks, under park walls or pales, and similar situations, where it puts out its fragrant foliage on the first approach of spring, and blossoms in April and May.

An extract of the leaves of this plant has been long in use with the common people, as a remedy for many complaints: it is now but little prescribed by medical practitioners, but Ray gives a remarkable instance of its efficacy in removing a violent and inveterate head-ache by drawing the juice of the plant up the nostrils.

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[a] The plants that produce naked seeds are generally aromatic, whilst those of the second order of this class, producing their seeds in a pod, are often of a poisonous nature.

WILD SAGE. *Teucrium scorodonia.* This is a common english plant, the leaves of which in appearance somewhat resemble the garden sage, and when rubbed in the hand have the same scent as the Hop. In the island of Jersey it is said to be used in brewing as a bitter; and I have known it used in Worcestershire for that purpose, dried and prepared like the Hop, in the proportion of twice the quantity, without any perceivable difference in the flavour of the beer. It grows wild by the sides of woods and hedges: at some future time, perhaps, it may be profitable to raise it in plantations where hops cannot be cultivated, but at present it is considered as a *weed,* and that of itself is a prejudice to overcome.

In the province of St. Jago in Chili there is a plant of this Class and Order, supposed to be a species of wild Basil, *Ocymum salinum,*[b] resembling the commom Basil so much as hardly to be distinguished from it, except that the flower-stem is round and jointed, and its scent and taste not like the Basil, but rather like that of a sea flag, or some marine plant. It is an annual, shooting forth in the spring, and continuing till the commencement of winter: every morning it is covered with hard and shining saline globules, resembling dew, which the country-men shake off the leaves to serve them instead of common salt, and in some respects is thought to be of a superior quality. Every plant produces daily about half an ounce of this salt; but Molina, a scientific naturalist, to whom we are indebted for this information, says, that it is extremely difficult to account for this phenomenon, as the situation where he found these plants was in the most fertile part of the kingdom, and at a distance from the sea of more than seventy miles.[c]

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[b] *Ocymum fol. ovatis glabris caule geniculato.*

When we see some plants secrete flint, separate and distinct from their fibres, as well as combined with their organic structure; and when we also know that plants secrete alcali in every situation, I cannot perceive why the presence of the sea or its contiguity should be considered as essential to the production of a neutral salt in the *Ocymum salinum,* according to our present knowledge of the constitution of nature.

British Plants of this Order.

Botanical Generic Names.	Common Names.
6 AJUGA	4 BUGLE
6 BALLOTA	1 HOREHOUND
7 BETONICA	1 BETONY

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[c] This account I have translated from an Italian work, entitled *Saggio sulla storia naturale del Chile, del Signor Abate Gio. Ignazio Molina, p.* 139.

Botanical Generic Names.	Common Names.
5 CLINOPODIUM	1 WILD BASIL
3 GALEOBDOLON	1 YELLOW DEAD-NETTLE
4 GALEOPSIS	4 ALL-HEAL
1 GLECHOMA	1 GROUND-IVY
13 LAMIUM	4 DEAD-NETTLE
5 LEONURUS	1 MOTHER-WORT
11 MARRUBIUM	1 WHITE HOREHOUND
6 MELISSA	2 BALM
2 MELITTIS	2 BASTARD BALM
19 MENTHA	9 MINT
20 NEPHETA	1 CAT MINT
12 ORIGANUM	1 MARJORAM
3 PRUNELLA	1 SELF-HEAL
3 HYSSOPUS	HYSSOP
16 SCUTELLARIA	2 HOODED WILLOW-HERB
24 STACHYS	4 WOUND-WORT
69 TEUCRIUM	3 WILD SAGE
22 THYMUS	2 THYME
23 VERBENA	1 VERVAIN

ORDER 2.

ANGIOSPERMIA.

Seeds enclosed.

TWO-FLOWERED LINNÆA grows in dry, stony, mossy woods; it is found wild in the neighbourhood of Aberdeen, and blossoms in May and June. It is fragrant at night, and smells like the *Meadow-sweet.*

This flower was named after Linnæus, who discovered it in Lapland: he seems to have had a particular partiality to it; and traced a fanciful analogy between it and his own early fate—‘ a little northern ‘ plant, flowering early, depressed, abject, and long ‘ over-looked.’[d]

In this Order the Acanthus is placed; an herbaceous plant, of ornamental foliage, often alluded to by the ancient poets,[e] from which Callimachus, a Greek architect, is said to have invented the Corinthian capital, suggested to him by accidentally finding it, growing round a basket covered with a tile.

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[d] Linnæus, the celebrated naturalist and founder of this system, was the son of a clergyman, born at Roeshult, in the province of Smaland in Sweden, in 1707. He studied physic at Leyden, and in 1735 took his doctor's degree, after which he settled at Stockholm. At the age of 34 he was appointed Professor of Physic and Botany in the university of Upsal. He also became physician to the king, who created him a knight of the polar star, and conferred on him a pension with a patent of nobility. He was the founder and first president of the academy of Stockholm, and a member of several foreign societies. He travelled into Norway, Dalecarlia, Desert Lapland, Germany, Holland, France, and England, in eager pursuit of his favourite science. He died in 1778.

[e] Et nobis idem Alcimedon duo pocula fecit,
Et molli circum est ansas amplexus acantho;
Ecl. iii. v. 44

Virgil also mentions an Acanthus, which was an Acacia-tree, supposed to be the *Mimosa nilotica* of Linnæus, the same tree that produces the gum Arabic. It is alluded to in Ecl. iv. v. 20. Georg. ii. v. 119.

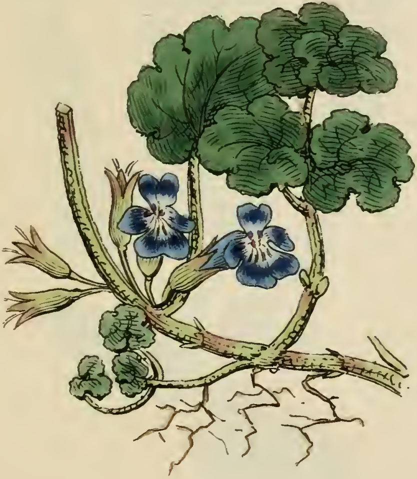
British Plants of this Order.

Botanical Generic Names.	Common Names.
52 ANTERRHINUM	10 SNAPDRAGON
5 BARTSIA	3 PAINTED-CUP
12 DIGITALIS	1 FOX-LOVE
9 EUPHRASIA	2 EYEBRIGHT
4 LATHRÆA	1 TOOTHWORT
2 LIMOSELLA	1 BASTARD PLANTAIN
1 LINNÆA	1 LINNÆA
5 MELAMPYRUM	4 COWGRASS
14 OROBANCHE	2 BROOM-RAPE
19 PEDICULARIS	2 RED-RATTLE
8 RHINANTHUS	1 PENNY-GRASS
22 SCROPHULARIA	4 FIGWORT
1 SIBTHORPIA	1 CORNISH MONEY-WORT

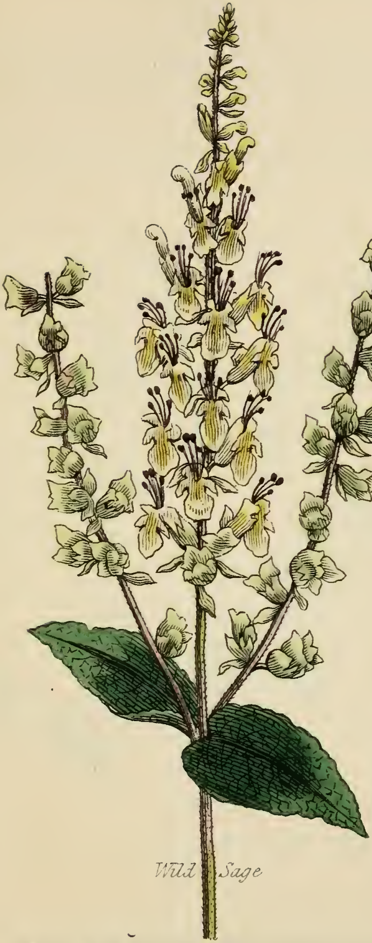
CLASS XIV

ORDER 1

GROUND-IVY



GLECHŌMA HEDERACĔA



TEUCRIUM SCORODONIA

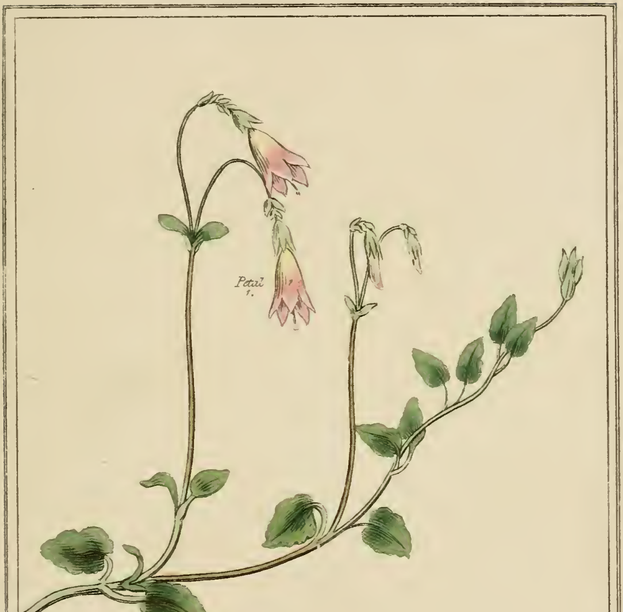
XIV

1

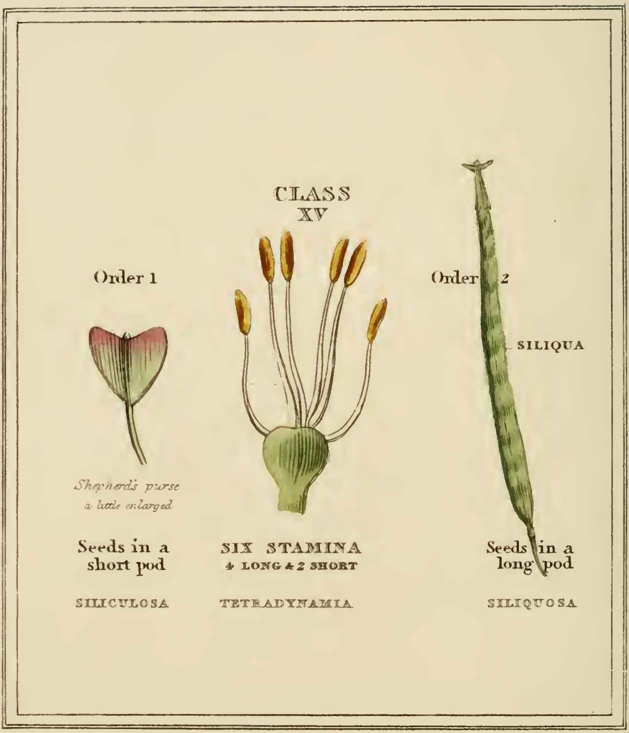
CLASS XIV

ORDER 2

TWO-FLOWERED LINNÆA



LINNÆA BOREĀLIS



THE CHARACTER OF THE CLASS & ORDERS OF
CLASS XV

TETRADYNAMIA.

CLASS XV.

SIX STAMINA, 4 LONG AND 2 SHORT.

This Class has two Orders.

THE Orders of this Class, like the former, are named after the manner of producing their seeds. The first Order has its seeds in a short or roundish pod, or pouch. The second Order has its seeds contained in a very long pod.

All the plants of this Class possess similar virtues; they are termed acrid and antiscorbutic in their raw state, as Mustard and Water-cress; when cultivated and boiled, they become a mild wholesome food, as Cabbage, Turnip, &c.

The flowers of this tribe of plants are called *cruciformed,* from their having four petals, which make a fanciful resemblance to a Greek cross.

ORDER I.

SILICULOSA.

Seeds in a short Pod.

BITTER CANDY-TUFT is an annual plant, and grows wild in great plenty in Buckinghamshire. It blossoms in July, and the whole herb is nauseously bitter. The Genus *Iberis* is unique in its natural order in having unequal petals.

British Plants of this Order.

Botanical Generic Names.	Common Names.
9 Bunias	1 Sea Rocket
8 Cochlearia	6 Scurvy-grass
6 Crambe	1 Sea Coalwort
9 Draba	4 Whitlow-grass
14 Iberis	2 Candytuft
5 Isatis	1 Wild Woad
23 Lepidium	4 Dittander
1 Sabularia	1 Awlwort
14 Thlaspi	6 Shepherds-purse
2 Vella	1 Cress rocket

ORDER 2.

SILIQUOSA

Seeds in a long Pod.

CORAL-WORT is a rare plant, blossoms early in May, and is found wild in few parts of England; it grows in Buckinghamshire in shady places. In the bosom of most of the leaves stands a solitary bud, or bulb, which falling off, vegetates in the ground, and by this mean the plant is plentifully propagated. Its seeds are rarely ever perfected, as is common with plants that increase much by the root.

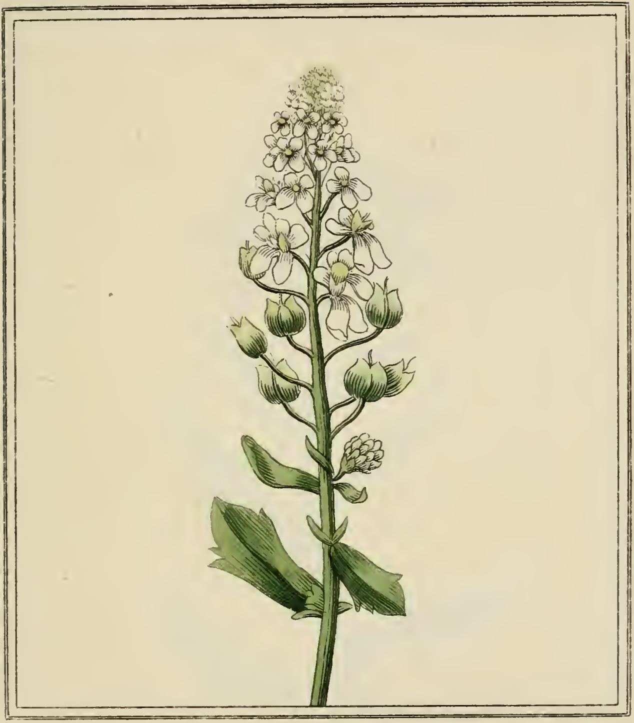
British Plants of this Order.

Botanical Generic Names.	Common Names.
15 ARABIS.................	3 TURKEY-POD
16 BRASSICA..............	6 CABBAGE
18 CARDAMINE............	7 CARDAMINE
22 CHEIRANTHUS..........	1 WALL-FLOWER
4 DENTARIA..............	1 CORALWORT
8 ERYSIMUM..............	4 HEDGE-MUSTARD
7 HESPERIS	1 DAMEWORT
6 RAPHANUS.............,	1 RADISH
19 SINAPIS................	3 MUSTARD
53 SISYMBRIUM....	8 WATER-CRESS
8 TURRITIS................	2 TOWER-MUSTARD

CLASS XV

ORDER 1

BITTER CANDY-TUFT

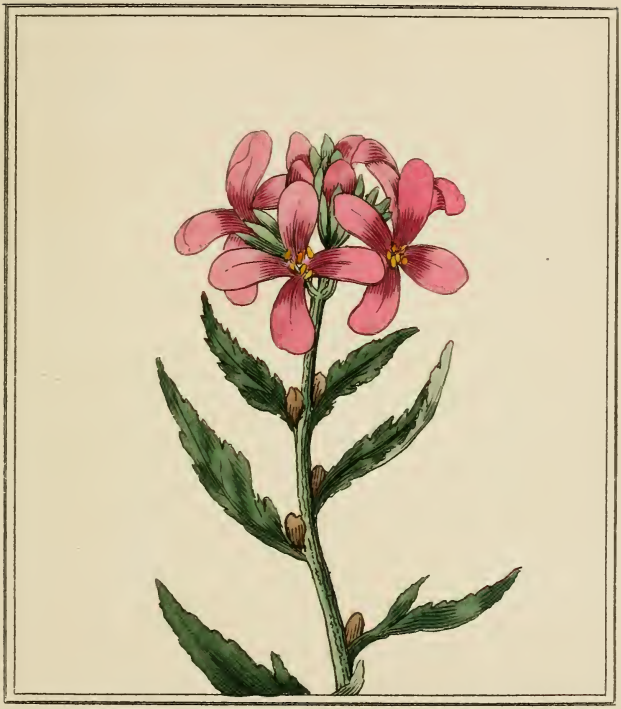


IBĒRIS AMĀRA

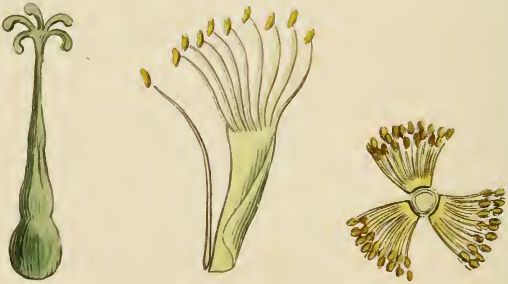
CLASS XV

ORDER 2

BULBIFEROUS CORAL-WORT



DENTARĬA BULBIFĔRA



CLASS XVI
MONADELPHIA

CLASS XVII
DIADELPHIA

CLASS XVIII
POLYADELPHIA

THE CHARACTER OF CLASS XVI. XVII. XVIII.

MONADELPHIA.

CLASS XVI.

ALL THE FILAMENTS OF THE STAMINA UNITED INTO ONE TUBE.

This Class has eight Orders.

ORDER I.

No British Plant of this Order.

SISYRINCHIUM BERMUDIANA. *Iris-leaved Sisyrinchium.* This plant is a native of the Burmudian Islands; it grows from one to two feet and a half in height, and blossoms from May to the end of July. It was known to the ancient Greeks, and its name has its origin in two Greek words, that would seem to imply a resemblance in the flower to a swine's snout.

TRIANDRIA.

Three Stamina.

ORDER 2.

HERMANNIA ALTHÆIFOLIA. *Marchmallow-leaved Hermannia* is a native of the Cape. It is a plant of free growth, and produces flowers during most of the summer months. It bears its flowers in

PENTANDRIA.

Five Stamina.

pairs, and the corollas are twisted, and, as I have before remarked, always contrary to each other. Of this Order Dr. Smith makes the Genus *Erodium*, of which, in his Flora Britanica, he describes three species figured in the English Botany under the numbers 646, 902, 1768.

ORDER 3.

No British Plant of this Order.

HEPTANDRIA.

Seven Stamina.

PELARGONIUM ACETOSUM, *Sorrel Crane's-bill.* This plant is a native of the Cape: it blossoms during most of the summer, and is readily propagated by cuttings; the leaves have somewhat the taste of sorrel, whence it derives its english name.

ORDER 4.

No British Plant of this Order.

OCTANDRIA.

Eight Stamina

AITONIA CAPENSIS *Cape Aitonia.* Of this Genus there is only one known species; it has its name from Mr. Aiton,[f] the author of the Hortus Kewensis. It is a native of the Cape of Good Hope, and was brought to England in the year 1774. It is a greenhouse shrub, of slow growth, and seldom exceeds three feet in height, and, when of a sufficient age, produces flowers and berries through most of the year.

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[f] William Aiton was born in 1731, near Hamilton, in the county of Lanark, and being bred to gardening, came in 1754 to London to seek employment. At the recommendation of Philip Miller, in 1759, he became superintendent of the botanical garden at Kew, which he greatly improved, and in 1783 he

ORDER 5.

DECANDRIA.

Ten Stamina.

GERANIUM PYRENAICUM, *Mountain-crane's-bill.* From the botanical name of this plant, it would seem to imply, that it was peculiarly a native of the Pyrenees, whereas it is found in waste ground, and on the borders of fields, in various parts of Europe, common about London, as at Chelsea, Hammersmith, &c. The intricacy of this tribe of plants caused Curtis to confound the *Geranium molle* with this species in his *Flora Londinensis.* It blossoms in July.

Of this Order Linnæus put the numerous Genus *Geranium,* but since his time, this tribe of plants has been divided by M. L'Heritier,[g] into three Genera,

was appointed to manage also the pleasure and kitchen gardens. In 1786 he published his "Hortus Kewensis." He died in 1793.

[g] Charles Louis L'Brutelle de Heritier was an eminent French botanist brn in Paris 1745. He enjoyed many places in the French government, but devoted himself principally to botanical pursuits. In 1786, Dombey having brought from Peru and Chili an inestimable collection of plants, L'Heritier undertook to publish a description of them, which was executed at London, under the title of the Flora of Peru. On his

which he arranged under this Order and the Orders 2, and 3, of this Class, by the titles, *Geranium Erodium* and *Pelargonium*.

This tribe consists of more than two hundred species, of which thirteen grow wild in Great Britain. It is remarkable, that the fertilizing pollen of these flowers is very apt to mix with others of different species, and so produce new species or varieties; but these plants rapidly degenerate, and in a few years become extinct.

ORDER 6.

No British Plant of this Order.

ENDECANDRIA.

Nineteen Stamina.

BROWNEA RACEMOSA. This is the only Genus in this Order. It is a shrub, or small tree, growing to the height of eighteen feet in woody and hilly places in America: the wood is covered with an ash-coloured bark. The blossom is scarlet. It has its name from Dr. Browne,[h] author of the history of Jamaica. The

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return to Paris he published a work with the singular title of *Flore de la Place Vendure.* He was assassinated in 1801, but his murderers were not discovered.

[h] Patrick Browne was an eminent physician, born at Crossboyne in Ireland, in 1720. When young he was sent to a relation of his in the island of Antigua, but the climate not agreeing with his constitution, he returned to Europe in 1737. He

practice of distinguishing different genera of plants by personal names, may have had its influence, however trifling, as an incentive to the pursuit of Botany; and though no exception be made to it as a reward for the ability or patronage of distinguished persons, yet such names as *Rudbeckia, Rotbollia,* and *Holmskioldia,* are very uncouth; but an *Amelia elegantissima,* I hope, will one day or other palliate these harsh sounds.

ORDER 7.

No British Plant of this Order.

DODECANDRIA.

Twelve Stamina.*

MAPLE-LEAVED PTEROSPERMUM is a native of the East Indies, where it grows into a tree; the bark is covered with a white wool, as is the under side of the leaves. The flower is sweet-scented and

---

resided at Paris five years, and then removed to Leyden, where he took his degree of M.D. He next went to London, where he formed an intimacy with some of the most learned of the faculty, and once more visited the West Indies, and fixed his residence in Jamaica. In the year 1750 he published his Natural and Civil History of Jamaica in folio, having the year before published a correct map of that island, drawn by himself. He died at Rusbrook in Ireland in 1790.

* This Order, though called *Dodecandria,* is chiefly composed of flowers having fifteen stamina.

the petals are white. The stamina are fifteen in number, with long twisted antheræ, and their filaments unite at the base; among these are five club-pointed bodies twice the length of the others, and much stouter than the filaments; and as they are the only internal parts that appear without forcibly opening the flower, it has the appearance, when superficially observed, of being pentandrous. It is propagated in England by seeds imported from India: in the winter it requires a stove, but may be removed into a green-house in the summer.

ORDER 8.

POLYANDRIA.

Stamina numerous and indefinite.

COMMON COTTON. This is an herbaceous plant, a native of the East Indies, growing to about three feet high. The whole plant is downy, and whilst young, odorous. The blossom is of a pale yellow, with five red spots at the bottom; and its seeds, which are ripened in September, are immersed in fine white cotton: the cotton, which is produced in China, of which the cloth called Nankin is made, is said to be tinged with red in its vegetable state, which is supposed to be the cause of its washing better than any cloth that we can manufacture to imitate it. Few plants are more useful than this: it furnishes clothing to the four quarters of the world; and the seeds are an article of food to the inhabitants where it is cultivated.

There are six species of this Genus, and the Barbadoes cotton is the species the most cultivated in the West Indies, and forms a considerable branch of their exports.

This species is set in rows in the West Indies, about five feet apart. It grows from four to six feet high, and produces two crops annually; the first in eight months from the time of sowing the seed, and the second four months afterwards. Each plant at the two gatherings is reckoned to produce about one pound weight of cotton; and an acre of land to produce 270 pounds weight on an average; but the certainty of gathering a good crop is very precarious; since it may be almost literally said of this plant, that in the morning it is green and flourishing, and in the same evening withers and decays. For, when the worms begin to prey upon a whole plantation, though they are at first scarcely perceptible to the naked eye, yet in three days they will grow to such a size, and prove so destructive, as to reduce the most verdant field, thickly and beautifully clothed with leaves and flowers, to almost as desolate and naked a condition as trees are in the month of December, in England. When these worms, which are of the caterpillar kind, have attained their full growth, they spin, and inwarp themselves as in a bag, or web, like silk-worms, in the few remaining leaves, or any other covering; and after a few days, in this their chrysalis state turn into dark-coloured moths and fly away.

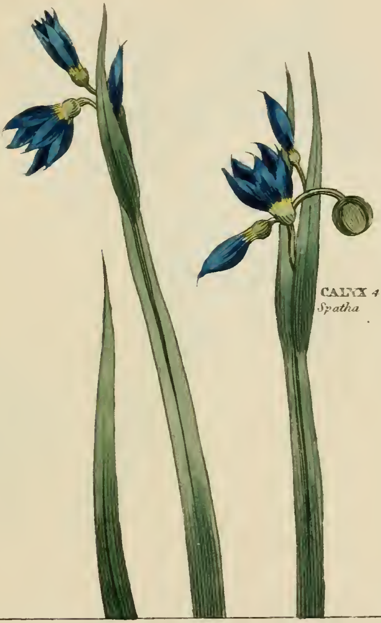
British Plants of this Order.

Botanical Generic Names.	Common Names.
7 ALTHÆA	1 MARSH MALLOW
9 LAVATERA	1 TREE-MALLOW
34 MALVA	4 MALLOW

CLASS XVI

ORDER 1

IRIS-LEAVED SISYRINCHIUM

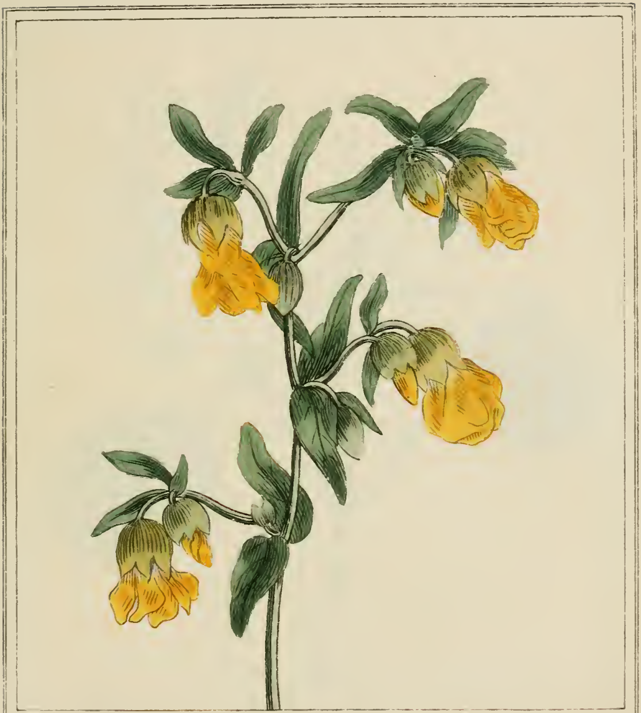


SISYRINCHĬUM BERMUDĪANA

CLASS XVI

ORDER 2

HERMANNIA

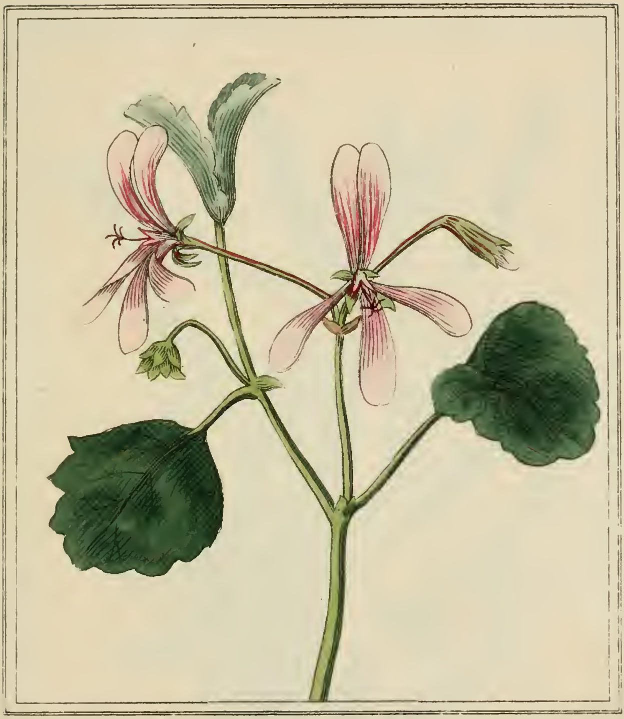


HERMANNĬA ALTHÆIFOLĬA

CLASS XVI

ORDER 3

SORREL CRANES-BILL

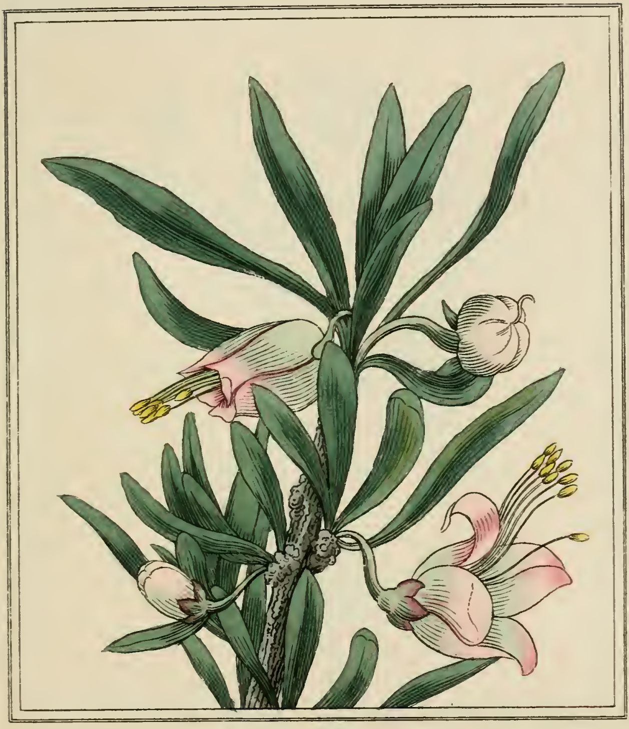


PELARGONĬUM ACETŌSUM

CLASS XVI

ORDER 4

CAPE AITONIA

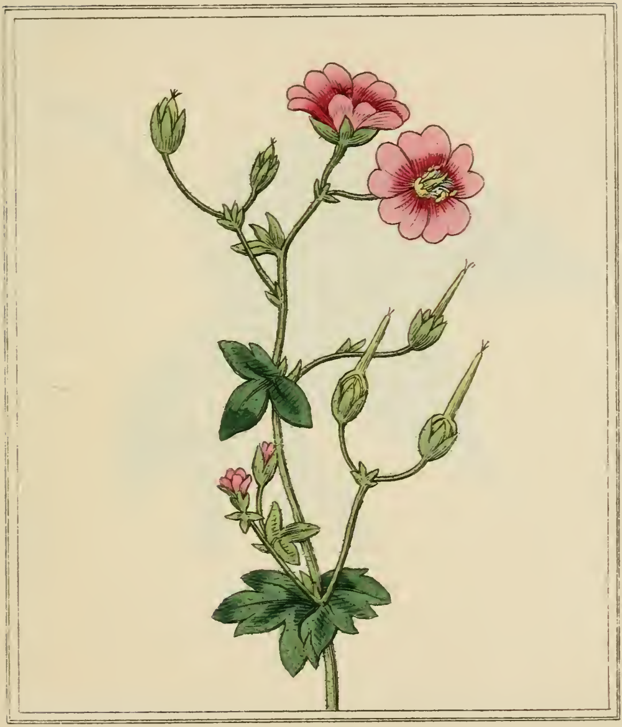


AITONĬA CAPĒNSIS

CLASS XVI

ORDER 5

MOUNTAIN CRANES-BILL

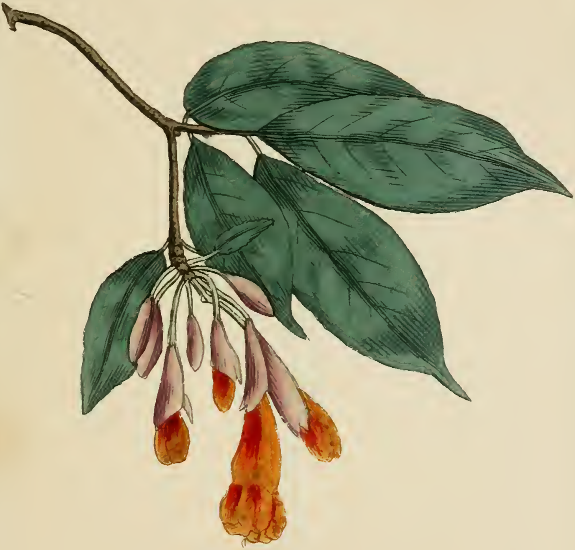


GERANĬUM PYRENAĬCUM

CLASS XVI

ORDER 6

BROWNEA

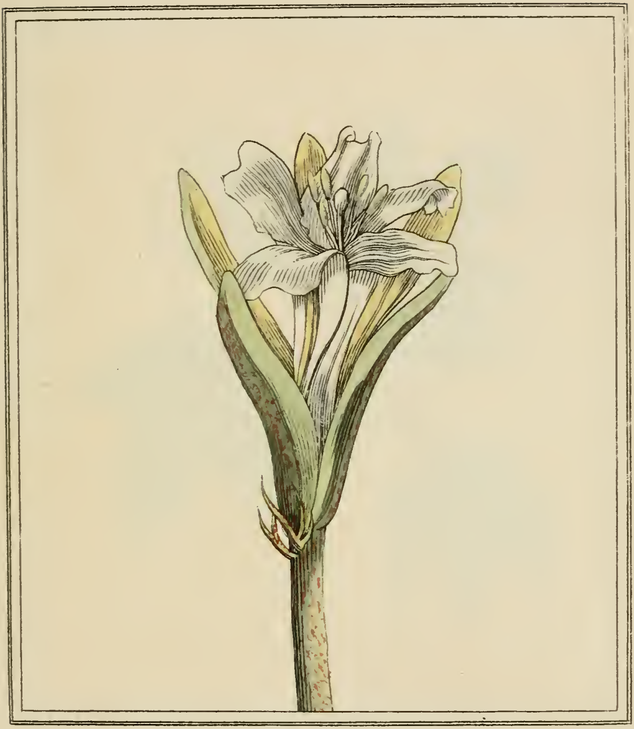


BROWNĔA RACEMŌSA

CLASS XVI

ORDER 7

MAPLE-LEAVED PTEROSPERMUM

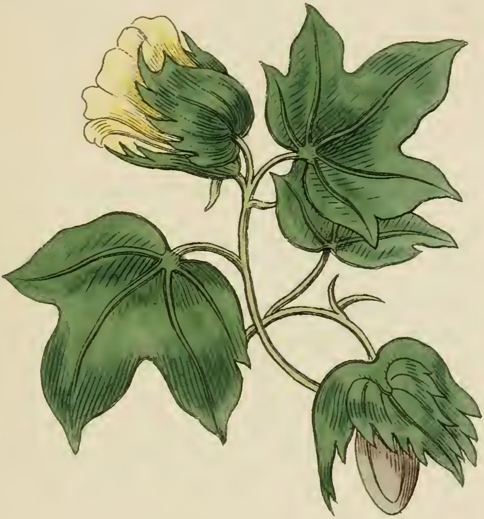


PTEROSPĒRMUM ACERIFOLĬUM

CLASS XVI

ORDER 8

COMMON COTTON



GOSSIPĬUM HERBACĬUM

DIADELPHIA.

CLASS XVII.

THE FILAMENTS OF THE STAMINA UNITED, MAKING TWO SETS, BOTH SOMETIMES COHERING AT THE BASE.

This Class has four Orders.

ORDER 1.

No British Plant of this Order.

TREE-LEAVED MONNIERIA. This plant is named after M. Monnier, a physician of Paris. It is the only Genus in this Order, a very scarce annual plant, with white flowers, a native of South America, and of which there is no good figure that can be accurately depended upon: the one annexed is copied from the French Encyclopid Methodique, which is the best representation there is of it, and that was delineated from a dried specimen.

PENTANDRIA.

Five Stamina.

ORDER 2.

YELLOW FUMITORY. This plant is a native of Barbary, and blossoms in May. Its leaves con-

HEXANDRIA.

Six Stamina.

tinue green all the year, and the flowers are produced in succession till October. Of the Genus *Fumaria* there are fifteen species, of which six are english. Dr. Smith observes, that the different species are remarkable for a great variety of forms in their seed vessels. This is the only British Genus of this Order.

ORDER 3.

OCTANDRIA.

Eight Stamina.

MYRTLE-LEAVED POLYGALA. Of the genus *Polygala*, there are forty-five species, but there is only one species of english growth, *Polygala vulgaris*, the only British plant of this Order. This is a shrubby plant, covered with a smooth brown bark; growing to the height of five or six feet. The flowers continue in succession for the greater part of the summer, and are white on the outside, but purple within.

ORDER 4.

DECANDRIA.*

Ten Stamina.

SENSITIVE HEDYSARUM is a native of Bengal, near the Ganges, and was first known in England by some plants raised by Kennedy and Lee of

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* This Order is composed of plants Papilionacæ or Leguminosæ, which have usually nine Stamina in one set, with a single

Hammersmith, from seeds sent to them from India by Lady Ann Monson, in the year 1772. This may be considered as one of the most extraordinary plants in the vegetable world. When the air is very warm, and quite still, its leaves are in continual motion, some rising, others falling, and others whorling circularly, by twisting their stems: the cause of this irritability seems to be very different from that of the common sensitive plant *Mimosa pudica.* Its motion does not appear to be at all influenced by any external stimulus, as I have frequently touched it, when the leaves have been in quick and slow activity, and the surrounding atmosphere at various temperatures, but without producing any change in its motion.

It is an annual plant, and grows to about three feet high; the leaves are of a bright green, with somewhat of a sea-green hue in the middle; the flowers are of a pale red, slightly tinged with blue, and sometimes with yellow.

To this Order belong the leguminous vegetables,

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one separate; but there are some exceptions: *Spartium*, *Lupinus* and *Ulex*, have ten stamina, with the tenth evidently distinguished from the rest, but incorporated with them by its lower part. The *Ononis* and some others have only a longitudinal slit in the upper side of the tube, without any indication of a separate stamen. These plants are therefore strictly *monadelphous*, and not *diadelphous*; but, as Dr. Smith observes, Linnæus here swerves from his strict artificial laws, in compliance with the decisive natural character which marks the plants in question. Therefore, when ten stamina are all alike separate and distinct, such plants are to be referred to the Class *Decandria*; but if they are all combined, to the Class *Diadelphia*.

as the Pea, Bean, Vetch, &c.[i] they are all said to be wholesome, but I believe there are some exceptions to that rule. The seeds of the Citisis Labernum, in their green state, have an emetic quality, and those, beautiful red seeds with a black spot, brought from India, which are sometimes worn as ornaments of dress,[k] are said by the natives to be so dangerous, that the half of one of them is sufficiently poisonous to destroy a man; this account, however, may exceed the truth; but that they have a very prejudicial quality I have reason to believe; for, within my own knowledge, I have seen an extraordinary effect of the poison of one of these peas. A poor woman who had some of them given to her, and who did not choose to be at the expense of having them drilled to make a necklace, put the seeds into hot water till they were sufficiently soft to be perforated with a large needle; in performing this operation she accidentally wounded her finger, which soon swelled, and became very painful, the swelling extending to the whole hand; and it was a considerable time before she recovered the use of it.

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[i] That which in common language is called a *pea-shell*, in the language of Botany is called *Legumen*, the seeds being arranged along one of its sutures. When, in a similar covering, the seeds are affixed to the seams on both sides, as in the plants of the second Order of Class XV. that kind of seed-vessel is properly called a *pod*. The English language wants this discrimination.

[k] The Botanical name of the plant that produces this Pea is *Abrus Precatorius.*

At Crossthwait's Museum, in Keswick, a gentleman inadvertently swallowed one of these seeds in the evening, and at night he was so dangerously ill that medical aid was thought necessary to save his life. As these facts have happened to persons within my own knowledge, I have no doubt of the poisonous nature of these peas; and as they are usually given to children, it would be prudent to discontinue that practice, as there is danger of their being swallowed in their amusements.

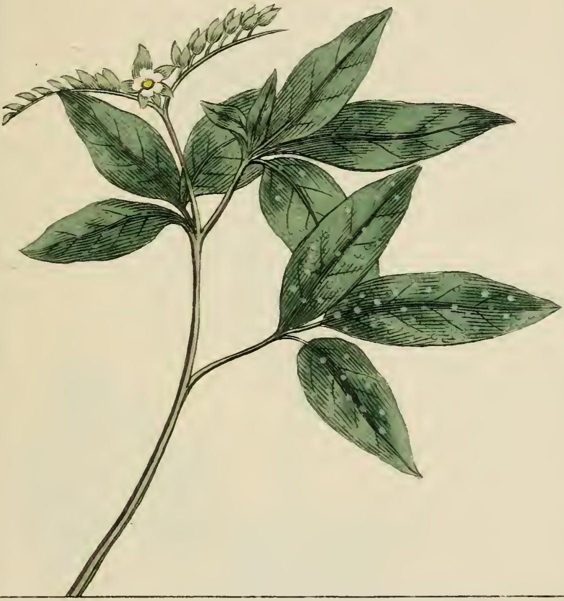
British Plants of this Order.

Botanical Generic Names.	Common Names.
17 ANTHYLLIS	1 KIDNEY VETCH
63 ASTRAGALUS	3 MILK VETCH
17 GENISTA	3 GREENWEED
67 HEDYSARUM	1 SAINTFOIN
5 HIPPOCREPIS	1 HORSE-SHOE VETCH
23 LATHYRUS	7 GRASS VETCH
23 LOTUS	1 CLAVER
11 MEDICAGO	6 LUCERNE
38 ONONIS	2 GROUND FURZE
5 ORNITHOPUS	1 BIRDS-FOOT
16 OROBUS	2 BITTER VETCH
3 PISUM	1 PEA
27 SPARTIUM	1 BROOM
51 TRIFOLIUM	17 TREFOIL
3 ULEX	2 FURZE
25 VICIA	9 VETCH

CLASS XVII

ORDER 1

THREE-LEAVED MONNIERIA

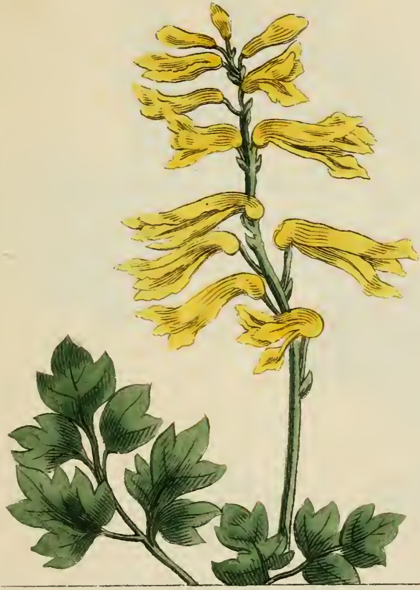


MONNIERĬA TRIFOLĬA

CLASS XVII

ORDER 2

YELLOW FUMITORY

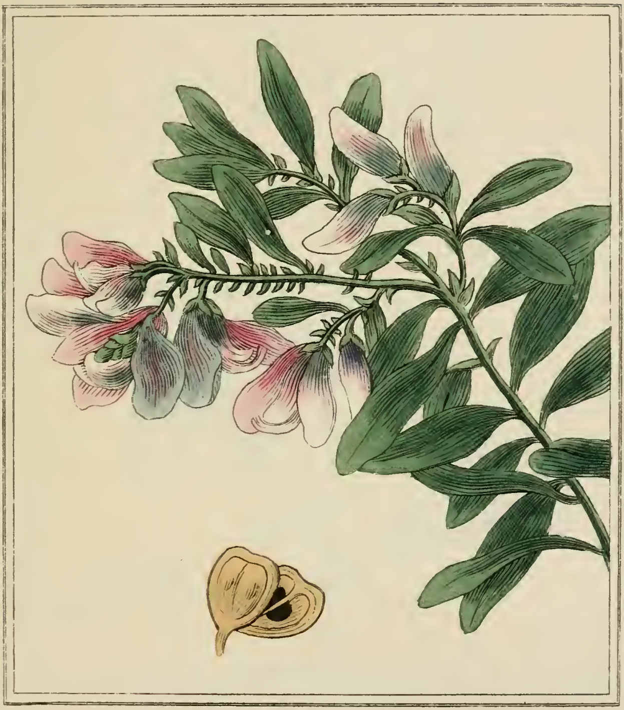


FUMARĬA LUTĔA

CLASS XVII

ORDER 3

MYRTLE-LEAVED POLYGALA

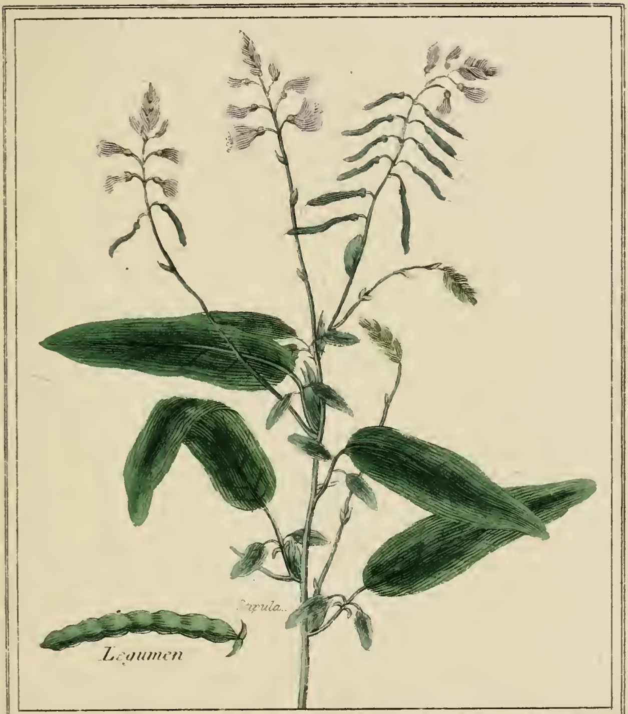


POLYGĂLA MYRTIFOLĬA

CLASS XVII

ORDER 4

SENSITIVE HEDYSARUM



HEDYSĂRUM GȲRANS

POLYADELPHIA.

CLASS XVIII.

THE FILAMENTS OF THE STAMINA UNITED, MAKING MORE THAN TWO PARCELS.

This Class has three Orders.

ORDER I.

No British Plant of this Order.

DODECANDRIA.

Stamina from twelve to twenty, or twenty-five, their filaments being unconnected with the Calyx.

ORANGE TREE is a native of India, but grows luxuriantly in many parts of Europe. This fruit was not known to the ancient Greeks or Romans; but the oranges now produced in Malta are those which are most esteemed. The Pomegranate is supposed to be the Golden Apple of the ancients. There is one kind of orange, the pulp of which is tinged with red, said to be produced by grafting the common Orange on the Pomegranate; but this is a vulgar and unfounded opinion, as the dark-coloured, called a black Rose,[1] *Rosa centifolia*, is said to be in consequence of grafting a red rose on a black currant tree, which is a common error of the same kind.

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[1] Among the various colours of flowers, scarlet is most rare, and yellow the most common; there is no flower that is entirely black. The black spot in the blossom of the common garden bean is darker than that of any flower I am acquainted with. The *Rosa centifolia*, *Lotus jacobæus*, and the *Pelargonium lobatum*, are of a dark purple.

To this Order belongs the tree which produces the seed of which Chocolate is made.[m]

ORDER 2.

No British Plant of this Order.

ICOSANDRIA.

Stamina numerous, their filaments being inserted, in several parcels, into the Calyx.

THYME-LEAVED MELALEUCA is a native of New South Wales. It is rather a tender greenhouse plant, seldom kept long, but easily renewed from seed. The soil should be like that on which the heath kind are cultivated. The first representation of this plant was published in the Linnæan Transactions, 1797.

ORDER 3.

POLYANDRIA.

Stamina very numerous, unconnected, with the Calyx.

MARSH ST. JOHN'S-WORT. Of the Genus, *Hypericum*, which is the only British genus of this Order, there are fifty-seven species, of which nine species grow wild in England. This plant is produced in spongy bogs in several parts of England. It blossoms in July and August, but the flowers seldom expand, unless in bright sunshine.

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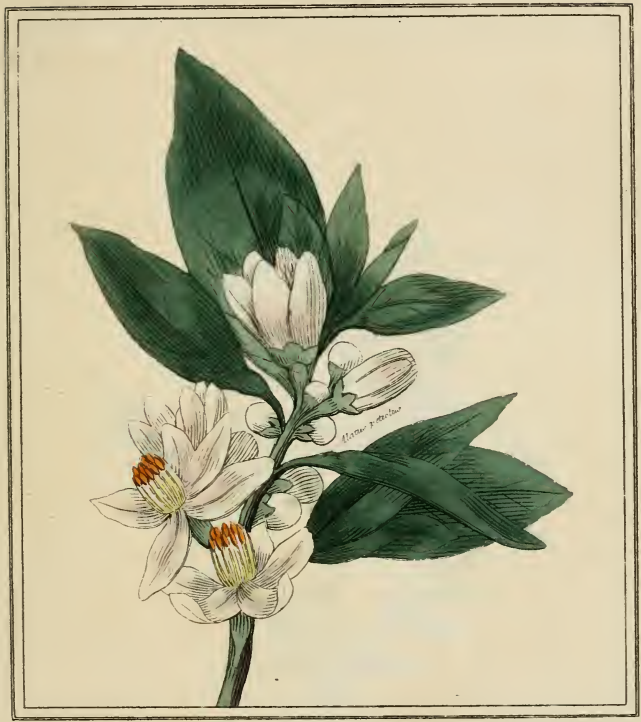
[m] Linnæus named this plant *Theobroma* (celestial food) which shews him to have been more fond of Chocolate than the Europeans who first tasted it. Benzo, who made a voyage to South America in 1541, calls it a *mess* more fit for pigs than for men. "I loathed it," he says, "for more than a year," Lib. ii. c. 16. And Acosta says, that some persons who were not used to Chocolate were disgusted at its appearance, and he seemed to think, with good reason—"Porque tiene una espuma arriba, y un borbollon como de hezes, que cierto es menester mucho credito para passar con ello." Lib. iv. C. 22.

CLASS XVIII

ORDER 1

ORANGE

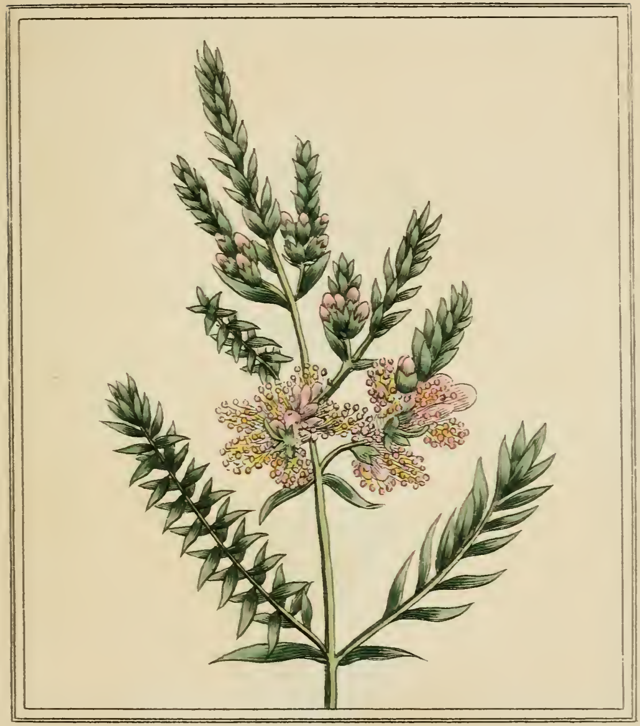


CĪTRUS AURANTĬUM

CLASS XVIII

ORDER 2

THYME-LEAVED MELALEUCA

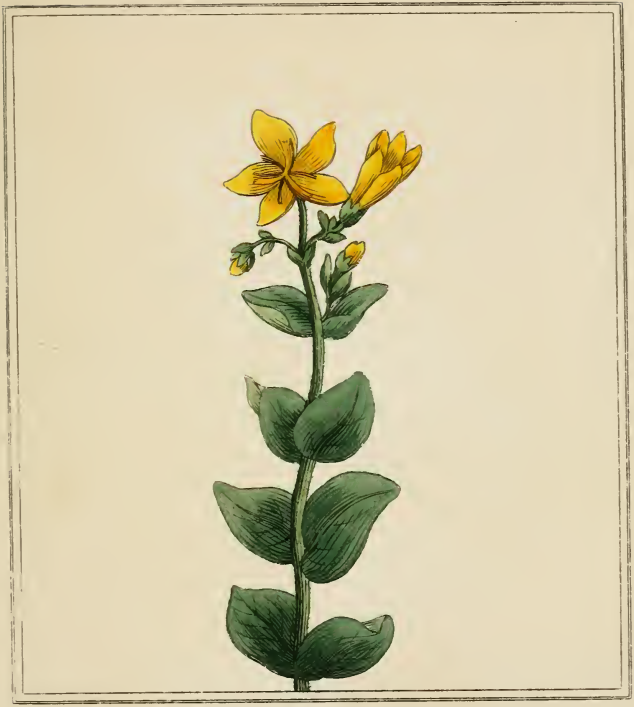


MELALEŪCA THYMIFOLĬA

CLASS XVIII

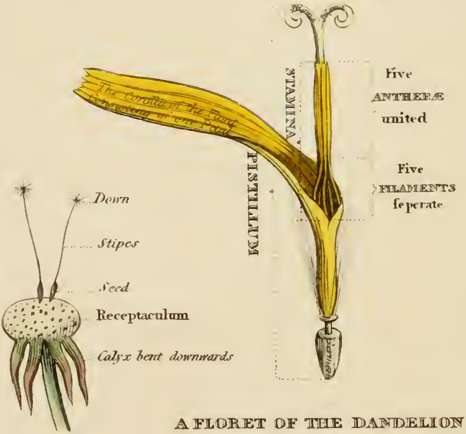
ORDER 3

MARSH S^T. JOHN'S-WORT



HYPERĬCUM ELŌDES

SYNGENESIA



A FLORET OF THE DANDELION
magnified

THE CHARACTER OF CLASS XIX

SYNGENESIA.

CLASS XIX.

ANTHERÆ UNITED INTO A TUBE. FLOWERS COMPOUND.

This Class has five Orders.

This Class comprehends those flowers which are called *compound.* The essential character of a *compound flower* consists in the antheræ being united together, so as to form a cylinder, and the filaments separate at the base;[n] which are, for the most part, five in number, and inserted into the *Corolla.* The Dandelion and Thistle are of this kind, composed of a number of small flowers called *Florets.* To illustrate the character of this Class, a Floret of the Dandelion is given, magnified: which plant is also of the first Order.

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[n] Those flowers which are composed of Florets, where the *antheræ* are not united into a cylinder, are called aggregate flowers, as the Scabious, Class IV. the Teasel, &c.

ORDER I.

POLYGAMIA
ÆQUALIS.

Both parts of fructification complete in each Floret; and each Floret, without the assistance of any other, capable of producing perfect seed.

COMMON CARLINE is scattered over dry and sandy heaths and pastures, and blossoms in June and July. Its name is said to be derived from the Emperor Charlemagne,[o] in whose time a medical virtue was ascribed to it which cured his army of the plague.

The seeds of this flower, as of many others of this natural Class, are furnished with a plume, serving them as wings, which in different plants are differently constructed; some, like a divergent tuft of hair, others are branched like feathers; some are elevated from the crown of the seed by a slender foot-stalk, which gives them a very elegant appearance; others sit immediately on the crown of the seed itself: by this provision of nature they perform long aërial journeys, and are thus disseminated far from the parent plant.

British Plants of this Order.

Botanical Generic Names.	Common Names.
2 AGERATUM............	1 HAIRY AGERATUM
3 ARCTIUM..............	1 BURDOCK
20 ATHANASIA............	1 SEA CUDWEED

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[o] The Emperor Charlemagne was born 739, and died A. D. 813, aged 74.

Botanical Generic Names.	Common Names.
14 Bidens	2 Water Agrimony
51 Carduus	10 Thistle
9 Carlina	1 Carline
3 Cichorium	1 Endive
20 Crepis	3 Hawks-beard
49 Eupatorium	1 Hemp Agrimony
55 Hieracium	13 Hawk-weed
10 Hyoseris	1 Small Swines succory
5 Hypochæris	3 Long-rooted Hawk-weed
11 Lactuca	3 Lettuce
5 Lapsana	1 Nipplewort
4 Leontodon	2 Dandelion
7 Onopordon	1 Cotton-thisttle
6 Picris	2 Ox-tongue
19 Prenanthes	1 Ivy-leaf
20 Serratula	3 Way-thistle
19 Sonchus	4 Sow-thistle
14 Tragopogon	2 Goats-beard

ORDER 2.

DAISY. With this interesting little flower every pasture and grass-plat is spangled, from the beginning of spring till the end of autumn.

It is called in French *La belle Margarete*, and with us the Daisy, being emblematical of the eye of the Day, from its opening to the rising sun. When the sun is declining the flower shuts itself up, as if to take

POLYGAMIA SUPERFLUA.

The central Florets having both parts of fructification complete, while those in the circumference have only Pistilla, but both kinds producing perfect seed.

its rest. It has always been a favourite with Poets, and observers of Nature. Chaucer, who is among the first that takes notice of the opening and shutting of flowers at particular times of the day, thus expressed his partiality for it:

> Well by reason men is calle maie
> The Daisie, or else the eye of the Daie
> —— She that is of all flowris the floure,
> Fulfilled of all virtue and honoure ;
> And even alike fair and fresh of hewe,
> As well in winter as in summer newe,
> As soon as ever the sunne ginneth West
> To sene this floure, how it will go to rest,
> For fear of night, so hateth she darknesse ;
> Her chere is plainly spread in the brightnesse
> Of the Sunne.———

British Plants of this Order.

	Botanical Generic Names.		Common Names.
27	Achillea	2	Yarrow
19	Anthemis	5	Chamomile
44	Artemisia	5	Southernwood
65	Aster	1	Starwort
2	Bellis	1	Daisy
27	Chrysanthemum	3	Ox-eye-daisy
41	Cineraria	2	Flea-wort
43	Conyza	1	Plowman's spikenard
3	Doronicum	1	Leopard's-bane
30	Erigeron	3	Flea-bane
66	Gnaphalium	11	Everlasting
34	Inula	4	Elecampane

8	MATRICARIA	3	FEVERFEW
75	SENECIO	8	GROUNDSEL
30	SOLIDAGO	3	GOLDEN-ROD
9	TANACETUM	1	TANSY
14	TUSSILAGO	3	COLTS-FOOT

ORDER 3.

POLYGAMIA.
FRUSTRANEA.

The central Florets having both parts of fructification complete, while those in the circumference have neither Stamina nor Pistilla.

BLUE BOTTLE. This is the only British Genus of this Order. The genus consists of seventy-seven species, of which, six are natives of Great Britain.

This species is common in corn-fields, and is a good example of this Order. It blossoms in June and the two succeeding months, and the petals are of a beautiful blue colour, though sometimes, white, and purple.

The flowers of the changeable Rose-hibiscus, *Hibiscus mutabilis*, are remarkable for altering their colour. At their first expansion they are white; they then change to a deep red, or rose-colour, which as they decay turns to purple. In the West Indies all these alterations happen in the course of one day, which in those hot countries is the longest duration of these flowers; but in England, where they continue near a week in perfection, the changes are not so sudden.

Among vegetables colour is so uncertain, that Linnæus has seldom taken it into the account to characterise a species, for it is found often to depend upon a difference of heat, climate, soil, and culture; and it is remarked, that red, is more easily changed into white and blue; blue, into white and yellow; yellow, into white; and white, into purple.

While colour is the most uncertain character of the Corolla, the figure of the petals of the same species is more constant than that of the fruit; hence Linnæus advises to arrange under the same Genus such plants as agree invariably in the Calyx, Petals, and Stamina.

ORDER 4.

No British Plant of this Order.

POLYGAMIA. NECESSARIA.

The central Florets having stamina only, and the Florets of the circumference only Pistilla.

GARDEN MARIGOLD grows wild in the southern countries of Europe, as the south of France and Italy. This Genus, *Calendula*, has fourteen species. Of this species there are several varieties. According to Linnæus's observations these flowers are open from nine in the morning till three in the afternoon. The regular expansion of flowers attracted early notice; and in the poems of Rowley there is an allusion to this property in the Marigold.

> "The Mary-bud that shutteth with the light."

And in Shakespeare it is thus expressed:

> "The Marigold, that goes to bed wi' the sun,
> And with him rises weeping."

The knowledge of this fact has also furnished him with a most beautiful poetical image in his *Tarquin and Lucrece.*

> "Her eyes like Marigolds had sheath'd their light,
> And canopy'd in darkness sweetly lay,
> Till they might open to adorn the day."

This property is not uncommon with plants in this natural Class. The Dandelion opens at five or six in the morning, and closes at nine. The Mouse-ear Hawk-weed opens at eight, and closes at twelve. The Sow-thistle opens at five, and closes between eleven and twelve, and the Goat's-beard opens at three in the morning, and closes at five or six in the morning, in fine weather.

ORDER 5.

No British Plant of this Order.

GREAT GLOBE THISTLE blossoms in July, and the seeds ripen in August It is a native of most of the countries in Europe, but not of England, and was introduced into our gardens in 1596. In its native state it grows in any soil or situation, not more than two feet high; but by culture it grows to more than twice that height.

POLYGAMIA SEGREGATA.

Compound Florets, each having a partial Calyx, but all included in one general Calyx.

In this Class Linnæus made a sixth Order, which has been abolished by subsequent Botanists.

This Class of compound flowers, *Syngenesia,* has been particularly treated upon by Vaillant, who principally confined his researches to this part of Botany, and published his discoveries and method of arrangement in the Memoirs of the Academy of Sciences at Paris.[p]

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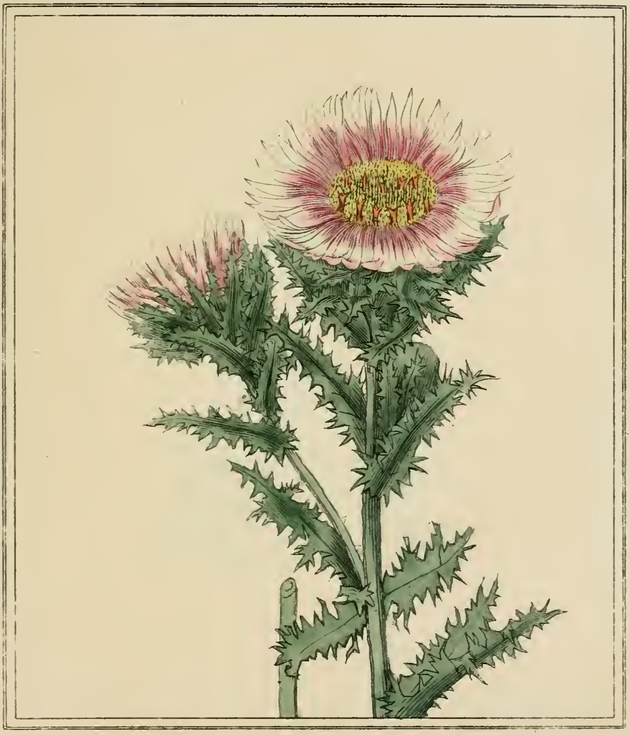
[p] Sebastian Vaillant, a French physician and botanist, was born at Vigny, near Pontoise, in 1669. He became superintendant of the royal garden, and a Member of the Academy of Sciences. He died in 1722 His works are, 1. Remarks on Tournefort's Botanical Institutions; 2. Discourse on the Structure of Flowers; 3. Botanicon Parisiense, or a Description of Plants which grow about Paris, folio, with plates; 4. a small Botanicon, 12mo. 1743.

CLASS XIX

ORDER 1

COMMON CARLINE

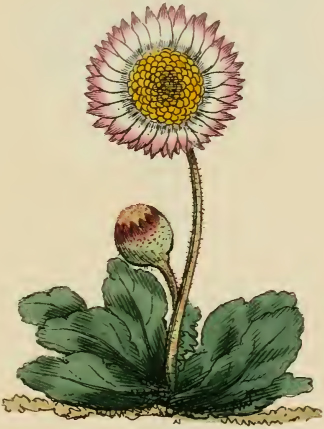


CARLĪNA VULGĀRIS

CLASS XIX

ORDER 2

COMMON DAISY

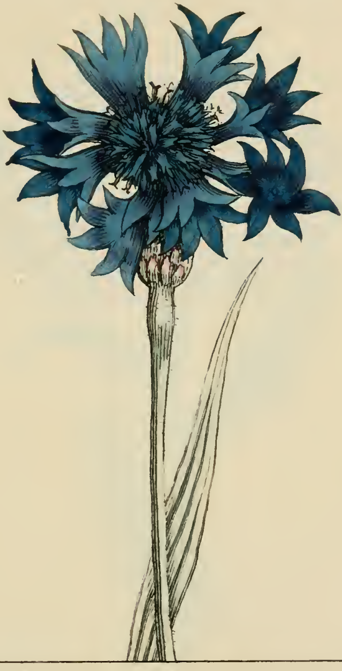


BĒLLIS PERĒNNIS

CLASS XIX

ORDER 3

BLUE-BOTTLE

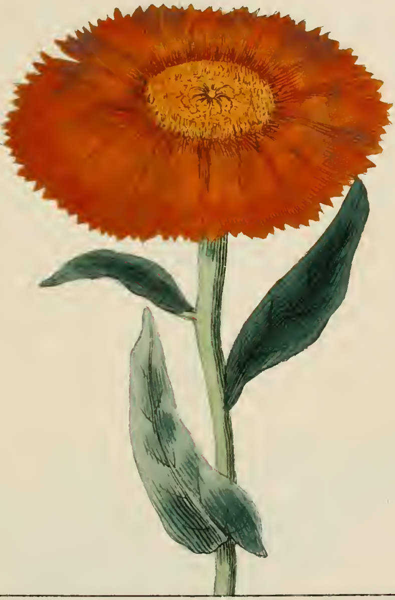


CENTAURĒA CYĂNUS

CLASS XIX

ORDER 4

MARIGOLD

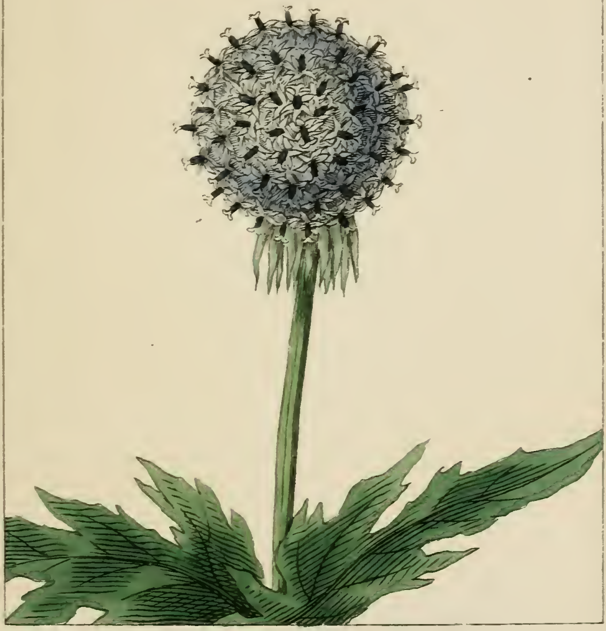


CALENDŬLA OFFICINĀLIS

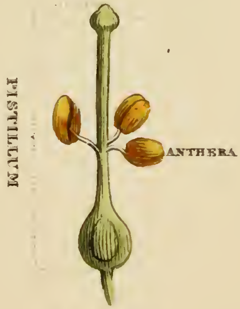
CLASS XIX

ORDER 5

GREAT GLOBE THISTLE



ECHĪNOPS SPHÆROCEPHĂLUS



GYNANDRIA

THE CHARACTER OF CLASS XX

GYNANDRIA.

CLASS XX.

STAMINA SITUATED ON THE PISTILLUM.

This Class has ten Orders in the system of Linnæus, but some alterations concerning them having been thought necessary, the celebrated Thunberg abolished the Class altogether, and he has been followed by several less intelligent writers. The reasons which led to this innovation appear to be, as Dr. Smith observes, from Linnæus erroneously placing in *Gynandria* several plants which have not the requisite character; hence the character itself has been judged ambiguous, or not founded in nature, and the system has been supposed to be simplified by overlooking it; but this appears to be a great mistake. The character of the Class, taken as above, is as evident, constant, and genuine, as that of any other in the system; and no uncertainty can arise, if care be taken to observe, that the stamina actually grow out of the germen or style and not merely out of any part that supports the germen, which caused the mistake when Linnæus considered the Passion flower as gynandrous, and originally placed it in this Class.

ORDER I.

MONANDRIA.

One Stamen.

FLY ORCHIS. This curious flower is found in chalky soils, but is not very common. It is most plentiful in Kent and Cambridgeshire, and blossoms in May and June. There are other plants of this genus that equally resemble a Bee and a Spider. From the root of one species of this plant, when dried and reduced to powder, salop is made.

British Plants of this Order.

Botanical Generic Names.	Common Names.
50 Orchis	10 Orchis
34 Ophrys	11 Ophrys
14 Serapius	5 Serapius

ORDER 2.

DIANDRIA

Two Stamina.

LADY'S SLIPPER. This is the only British plant of this Order; it blossoms in May, and the seeds ripen in the beginning of August. The stem decays to the root, and a new one is produced in the following Spring.

In its wild state it is confined to some remote and little frequented woods in the north of England; it is found in Lady Amherst's woods at Leven Grove, and may be considered as the queen of the European Orchideæ. It is among the scarcest of British plants, and most valued for its beauty and singularity. There are five species, but only this one of English growth.

ORDER 3.

No British Plant of this Order.

TRIANDRIA.

Three Stamina.

MEBOREA is a native of Guiane, a tree of midling size, with a stem of four or five inches in diameter, to the height of three or four feet. It blossoms in January, and bears ripe fruit or seeds at the same time. The flower is without a corolla, and is very small, so that it requires to be greatly magnified to know its structure. The Calyx is of one piece, divided at the bottom into six green lobes. The leaves are alternate, with two little stipulæ[q] at the base.

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[q] Besides the ordinary leaves of a plant, there are other parts connected with them and the stem, denominated, by Linnæus, *Fulcra*, but which, in English, may be changed for the term *Appendages*, and according to Dr. Smith's arrangement, are enumerated in the following order.

1. STIPULA, a leafy appendage to the proper leaves, or to their footstalks, as in the example Meborea, and the little leaflets in the Styrax officinalis, Hedysarum. Class X. and XVII.

2. BRACTEA, a floral leaf, or leafy appendage to the flower or its stalk, as in the Holosteum, and Deonæ muscipula. Class III. and X.

ORDER 4.

No British Plant of this Order.

TETRANDRIA.
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FourStamina.

GREATER STYLIDIUM. This plant is a native of Port Jackson, New South Wales; and is supposed to grow, in a sandy soil, to the height of two

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3. Spina, a Thorn, as in Rhamnus Lotus. Class V.

4. Aculeus, a Prickle, as in the stem of the Rose, and Egyptian-bean Lily. Class XII. and XIII.

5. Cirrus, a Tendril, as in the Passion Flower and Anguria. Class V. and XXI.

6 Glandula, a Gland, a little tumour discharging a fluid, as on the stalk and Calyx of the Moss-rose.

7. Pilus, Hair, as on the leaves of the common Mullein, and Stachis, and the little stinging bristles on the Nettle come under this denomination.

The stems of plants have also several distinct names, appropriate to their peculiar, and separate character.

i. Caulis, is a stem or trunk, properly so called, bearing leaves, as well as flowers, without any particular order from the bottom to the top; such as the trunks and branches of all trees and shrubs, of which the Meborea may serve as an example.

ii. Culmus, a straw, the peculiar stem of the Grasses, Rushes, and plants nearly allied to them: as the stem of the Anthoxanthum Phleum, and Festuca, &c. Class II and III.

iii. Scapus, a stem, which springs from the root, bearing flowers and seeds, but not leaves, of which the Dionæa muscipula, Class X is a good example.

iv. Pedunculus, a flower stalk which springs from the stem, and, like the Scapus, bears the flowers and seeds, but not or three feet. The column of the Stamina, which is peculiarly constructed, of one of the species of this Genus, *Stylidum irritabile,* exhibits a remarkable instance of irritability: when touched, it throws itself backward into a curved form with great quickness, and in about half an hour returns to its former position. The only specimen of this curious plant that I have seen is in the garden of Messrs. Lee and Kennedy, at Hammersmith.

the leaves, as the stalk in the Dionæ muscipula, which springs from the *Bractea,* already referred to, Class X. The Trientalis and Fuchsia also afford good examples of Pedunculi.

V. PETIOLUS, is a leaf stalk, and exclusively applied to that meaning, of which good examples are infinitely numerous: the Pepper, Cherry Laurel, Meboria, &c. will serve as illustrations. Class II. XII. XX.

VI. STIPES, the base of a frond, or a kind of stem passing into leaves, or not distinct from the leaf; also the thread, or slender stalk, which supports the *pappus,* or down, connecting it with the seed: see Illustration of Class XIX. The stem of a Fungus, or Mushroom, is likewise called Stipes: see Class XXIV.

VII. FRONS, is the stem-leaf and fructification united, that is, the flowers and seeds produced from the leaf itself, as in Ferns, Polypodium, Class XXIV.: it is a term also applied to Lichens, and others in which the whole plant is either of a crustaceous or leafy substance, from which the fructification immediately proceeds.

ORDER 5.

No British Plant of this Order.

PENTANDRA. Five Stamina.

SWEET-SCENTED PERGULARIA. The native place of this plant is uncertain, but it is cultivated in China, from whence Lady Hume received it. It blossomed in her hot-house in August 1791. The flowers, which are of the size of a primrose, of a yellowish green, have a sweet lemon-like scent, especially in the evening.

ORDER 6.

HEXANDRIA. Six Stamina

COMMON BIRTH-WORT. Of this Genus there are twenty-seven species; but this one species only, is a native of Great Britain, and is the only British plant of this Order. It blossoms from June to September. It is a native of most of the countries of Europe, and is generally thought to be a native of England, though Millar is not of that opinion. It dyes wool of a good yellow colour: the roots have an aromatic scent, and a warm bitterish taste, and are used in medicine and surgery.

The powdered root of one species of this plant, *Aristolochia anguicida*, is said to be peculiarly efficacious in curing the bite of venomous snakes in America. Professor Jacquin says, that if the juice of this root be put into the mouth of a serpent it may be handled with safety, but will return to itself after some hours; it is also asserted, that in larger quantities it is destructive to those reptiles.

ORDER 7.

No British Plant of this Order.

OCTANDRIA.

EightStamina

CYTINUS is a parasitical plant, growing on the roots of the Cistus. Of this Genus there is only this one species. It is an annual, and a native of Spain, Portugal, and Barbary. The colour of the flower is red with yellow. The number of Antheræ and the divisions of the stigma vary; the number of the antheræ is double the divisions of the stigma.

The Orders 8, 9, and 10 are abolished.

END OF VOL. II.

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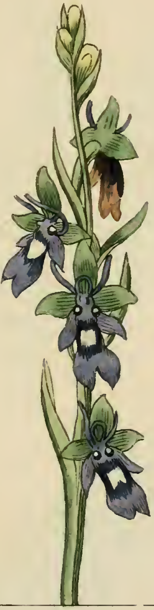
CLASS XX

ORDER 1

FLY ORCHIS

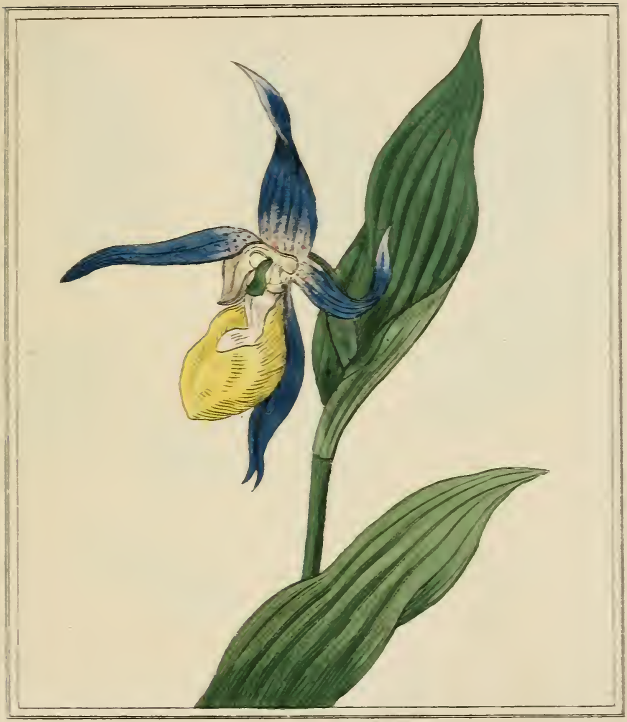


ŌPHRYS MUSCIFĔRA

CLASS XX

ORDER 2

LADIES SLIPPER

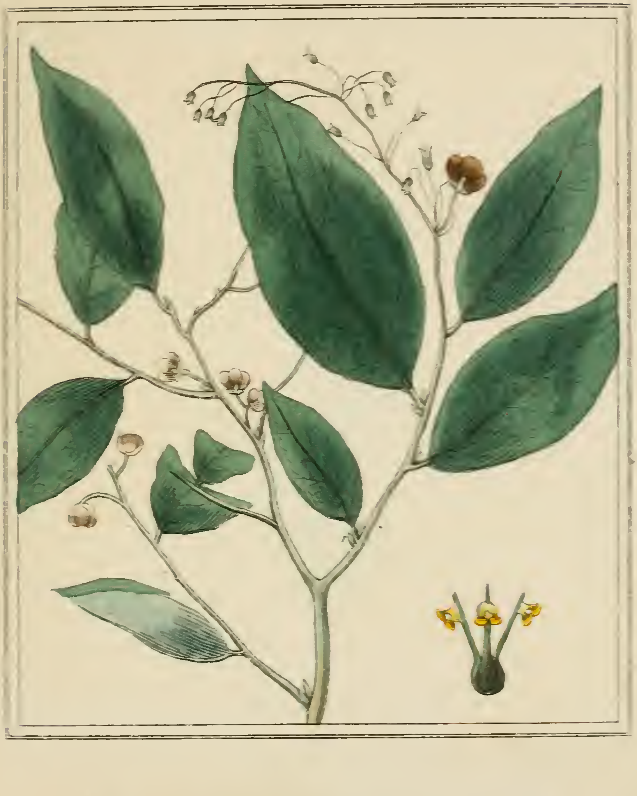


CYPRIPEDĬUM CALCEŌLUS

CLASS XX

ORDER 3

MEBOREA

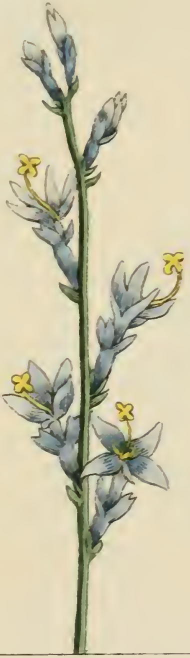


MEBORĔA GUYANNĒNSIS

CLASS XX

ORDER 4

GREATER STYLIDIUM

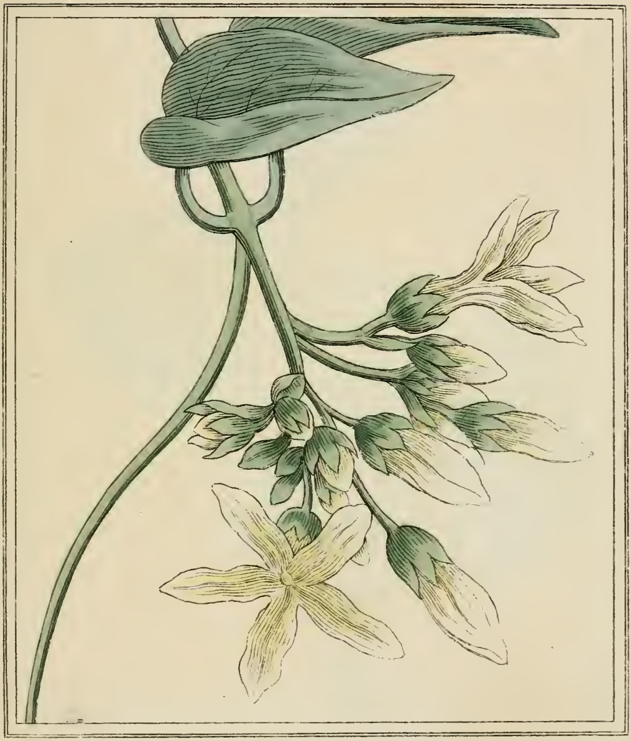


STYLIDĬUM MĀJOR

CLASS XX

ORDER 5

SWEET-SCENTED PERGULARIA

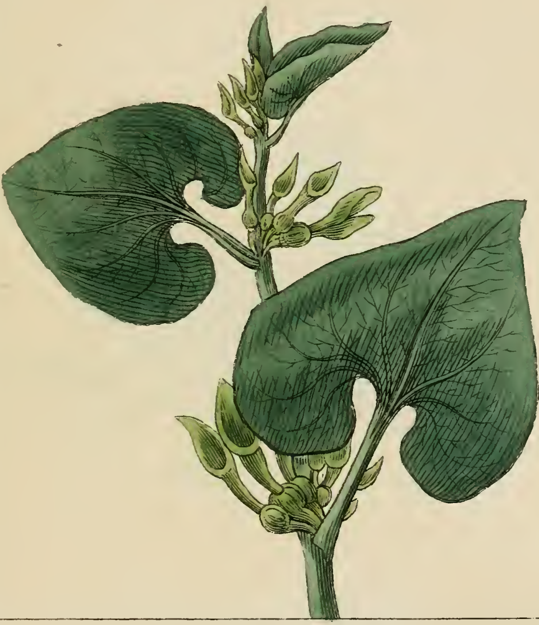


PERGULARĬA ODORATISSĬMA

CLASS XX

ORDER 6

COMMON BIRTHWORT

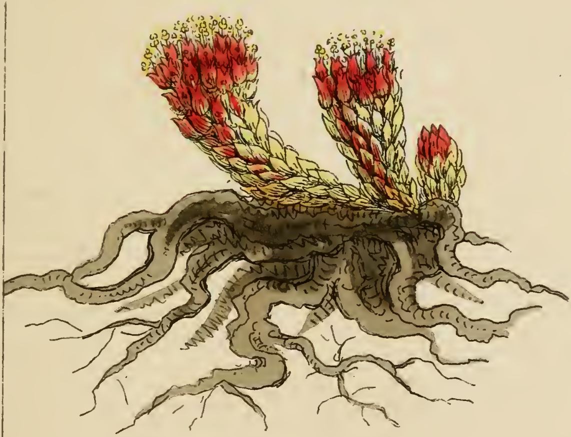


ARISTOLOCHĬA CLEMATĪTIS

CLASS XX

ORDER 7

CYTINUS



CYTĬNUS HYPOCĪSTIS

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